

LAKE TAHOE WATER QUALITY INVESTIGATIONS

**ALGAL GROWTH POTENTIAL ASSAYS • PHYTOPLANKTON
• PERIPHYTON • NEARSHORE NETWORK STATION ADDITIONS**



ANNUAL REPORT

JULY 1, 2017– JULY 31, 2018

**SUBMITTED TO:
STATE WATER RESOURCES CONTROL BOARD
LAHONTAN REGIONAL WATER QUALITY CONTROL BOARD**

BY:



February 8, 2019

Lake Tahoe Water Quality Investigations

Algal Growth Potential Assays •Phytoplankton
•Periphyton •Nearshore Network Station Additions

Annual Report

July 1, 2017– July 31, 2018
Agreement No. 16-076-160

Submitted to:

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Lahontan Regional Water Quality Control Board

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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, 2017 and July 31, 2018 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; (3) quantification of periphyton (attached algae) in the littoral zone; (4) nearshore network station additions; (5) project quality assurance.

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. This report presents the results of 4 AGP assay tests that were done July, 2017 – June, 2018.

The results from monitoring during 2017 indicated that the Lahontan standard was not exceeded at any sites. During calendar years 2014-2017, the Lahontan standard was only exceeded in one year, in 2015, at two stations: Tahoe City and Timber Cove.

There were differences in algal growth potential between sites on several individual collection dates. The highest level of variation and highest levels of AGP occurred in the experiment done using lake water collected 3/28/18. The highest levels of AGP in that experiment were: Emerald Bay (1.39 µg/l chlorophyll *a*), Zephyr Cove (1.23 µg/l chlorophyll *a*), Rubicon Bay (1.20 µg/l chlorophyll *a*) and Timber Cove (1.16 µg/l chlorophyll *a*). The lowest levels of AGP in that experiment were: Mid-lake North (0.48 µg/l), and Sunnyside (0.60 µg/l). In the experiment done on 6/28/18, AGP levels were very low, less than 0.30 µg/l at all sites).

Though no sites consistently exceeded the Lahontan standard, a few sites tended to have higher AGP in the experiments. Emerald Bay, Tahoe Keys and Timber Cove were sites most frequently among the top 3 (highest AGP levels) for experiments done Aug. 2013 to June, 2018. Mid-lake North, Rubicon Bay and Mid-lake South were sites most frequently among the bottom 3 (lowest AGP levels).

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), collected June 28, 2017, Sept. 12, 2017 and Dec. 8, 2017 are presented. The total biovolumes and cell numbers were low to moderately high in these collections. Biovolumes ranged from: 39.03 mm³/m³ at Rubicon Bay on June 28 to 210.51 mm³/m³ at Emerald Bay on Dec. 8, 2017. Total abundance of cells ranged from 60,930 cells/ liter at Glenbrook on Sept. 12 to 307,185 cells/ liter at Tahoe City on Sept. 12, 2017.

In the September 12, 2017 sample, several sites had types of algae which can be associated with more fertile waters (green algae and cyanobacteria). At two sites (Zephyr Cove and Mid-lake South), green algae constituted a large portion of the biovolume (65% and 76%) of total biovolume respectively. At both those sites the primary green algae contributing to biovolume was *Botryococcus braunii*. Small amounts of cyanobacteria were also found at several of the sites in Sept. 2017. The two sites with the greatest abundances of cyanobacteria included the Tahoe Keys nearshore station (27530 cells/ liter, 11.79% of total cell numbers) and Rubicon (21924 cells/ liter and 11.13% of total cell numbers).

In counts done for the September 12, 2017 samples, two cyanobacteria types, *Dolichospermum spiroides* (taxonomic synonym is *Anabaena spiroides* (Wacklin et al., 2009)) and *Phormidium* were observed at several nearshore sites. Interestingly, in the summer of 2017, a bloom of cyanobacteria occurred within portions of the Tahoe Keys lagoons. The bloom was of concern due to the potential for the algae involved to produce certain algal toxins. Precautions for contact by people and pets with the cyanobacteria were taken, along with increased monitoring by the Tahoe Keys and Lahontan. One of the cyanobacteria groups identified in monitoring of the bloom within the Tahoe Keys lagoons, was *Dolichospermum*. Note that *Dolichospermum spiroides* was observed at several of the nearshore monitoring sites on Sept. 12 included with our monitoring. Whether there was a linkage between the low numbers of *Dolichospermum spiroides* found in the nearshore adjacent to Tahoe Keys and the bloom of cyanobacteria which included *Dolichospermum* in the Tahoe Keys lagoons is uncertain. This was because small amounts of *Dolichospermum spiroides* were also observed elsewhere in the nearshore around Lake Tahoe including at Rubicon Bay, Tahoe City and Kings Beach.

Species richness (number of different species) at a site can provide some indication of the trophic state of waters. 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 mean levels for number of species Aug. 2013 – Dec. 2017 are within the oligotrophic range. Tahoe City had the greatest mean number of species for samples (34±7 species), followed by Tahoe Keys nearshore (32±6 species), then three other sites, which had 28 species (Emerald Bay, Camp Richardson and Kings Beach). The lowest number of species per site were measured at the two mid-lake stations Mid-lake No. and Mid-

lake So., (which had 21±6 and 22±5 species respectively) followed by Rubicon Pt. which had a mean number of 23 species.

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. In this report we summarize the data collected during the period January to July, 2018.

During January to July 2018, algal biomass was monitored at 9 “routine sites” on five different dates which included the period of typically highest biomass in the spring. Moderate to high spring peaks in periphyton biomass were observed at several west shore sites, while biomass at sites along the east shore remained low. Moderate to high spring peaks in chlorophyll *a* were observed at Dollar Pt. (39.14 mg/m²), Rubicon Pt. (73.41 mg/m²) and Tahoe City (89.48 mg/m²). At Tahoe City, the peak biomass in 2018 was the highest of the last three years. At Dollar Pt. and Rubicon Pt. the peak biomass was much higher in 2018 than in 2017. At Pineland, peak biomass at 0.5m in 2018 (33.42 mg/m²) was similar to that observed in 2017 and much lower than that observed in 2016. Peak periphyton biomass levels at 0.5m have been relatively low the past 5 years at Pineland relative to levels observed 2008-2013.

The moderate to heavy periphyton observed along the west shore in 2018 was different than the light biomass observed in 2017 at 0.5m around the lake. This difference may be associated with the sustained high lake levels in 2018. Lake level fluctuated between the maximum (6229.1 ft.) and just below 6228 ft. through the spring of 2018. As a consequence, rock substrate at 0.5m in 2018, remained continually submerged during the year, allowing development of the periphyton community at 0.5m. This was different from WY 2017 in which rapid rises in lake level resulted in shorter periods for development of periphyton biomass at 0.5m and generally light biomass.

Microscopic observation of the periphyton samples from routine sites showed that both stalked diatoms and cyanobacteria were present in many of the samples in 2018. The sustained high lake levels allowed sufficient time for both algal types to establish on the rocks at 0.5m.

An additional 46 sites were evaluated during a “Spring Synoptic” sampling to assess levels of at many sites between the “routine” stations. This sampling provides essentially a “snapshot” of the levels of periphyton around the lake during the period of peak spring biomass. The Periphyton Biomass Index (PBI) provides a means to rapidly assess periphyton levels at sites. Moderate to heavy PBI was measured along much of the west shore and at several locations along the south east shore. The areas with the highest PBI included: South Fleur du lac, Tahoe City Tributary, So. Dollar Cr., Ward Cr., Garwoods and the Emerald Bay- Rubicon station.

Generally light PBI was observed at 0.5m along much of the east shore and at a couple of sites along the southwest shore. The amount of periphyton as represented by PBI was much heavier in 2018 around the lake at 0.5m, compared to 2017.

Some interesting observations from this year's periphyton monitoring included observations of extremely heavy, stringy growth of periphyton at the South Fleur du lac site. A long-time resident from the area indicated the level of growth there was the heaviest he's seen going back to 1990. This site is near a stormwater drain and south of Blackwood Cr. which may contribute nutrients. However, the cause of the particularly heavy growth this year there is not known.

Another interesting observation from this year's monitoring was the presence of motile diatoms (viewed under the microscope) in samples collected from many sites during the spring. These diatoms included cells of *Gomphoneis* (which can also produce stalks and attach to substrate). The ability to move, adhere and produce stalk material to attach and rise above other algae on substrate, provide potential mechanisms for exploiting their habitat. The stalked forms of *Gomphoneis* along with other stalked diatoms are responsible for the thick furry growths of periphyton observed in the spring in many areas.

Nearshore Station Network

Two stations were added to the nearshore water quality monitoring network in November 2017. The new station at Timber Cove is located off of the end of the long pier running from the "Boathouse on the Pier" restaurant. The new station at Camp Richardson is located off of the pier extending from the Camp Richardson marina. Both stations were damaged due to lightning strikes in May 2018 but have since been repaired and re-installed.

Together with the existing set of eight Lake Tahoe nearshore stations, these new stations are generating a high-frequency, spatially distributed data set that allows us to quantify temperature, conductivity, wave height, chlorophyll-*a* fluorescence, dissolved organic matter fluorescence, turbidity, and dissolved oxygen patterns at the perimeter of Lake Tahoe.

Introduction

This report presents the results of work completed by the U.C. Davis – Tahoe Environmental Research Center (TERC) between July 1, 2017 and July 31, 2018 under Agreement No. 16-076-160: Lake Tahoe Water Quality Investigations. Primary areas of investigation or tasks presented include: (Section I) algal growth potential assays; (Section II) phytoplankton identification and enumeration; and (Section III) quantification of periphyton (attached algae) in the littoral zone; (Section IV) nearshore network station additions; (Section V) quality assurance and quality control details for the investigations are presented in the report. Detailed summaries of AGP data and phytoplankton enumeration data are presented in the appendix.

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 $\sim 74 \mu\text{E m}^{-2} \text{sec}^{-1}$), 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 the experiment using a Turner Designs 10AU fluorometer (configured for *in vivo* and extractable

¹ These methods differ slightly from the early DWR studies with respect to: lighting (DWR used a light intensity of 700 foot candles or $\sim 91 \mu\text{E m}^{-2} \text{sec}^{-2}$) 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.

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).

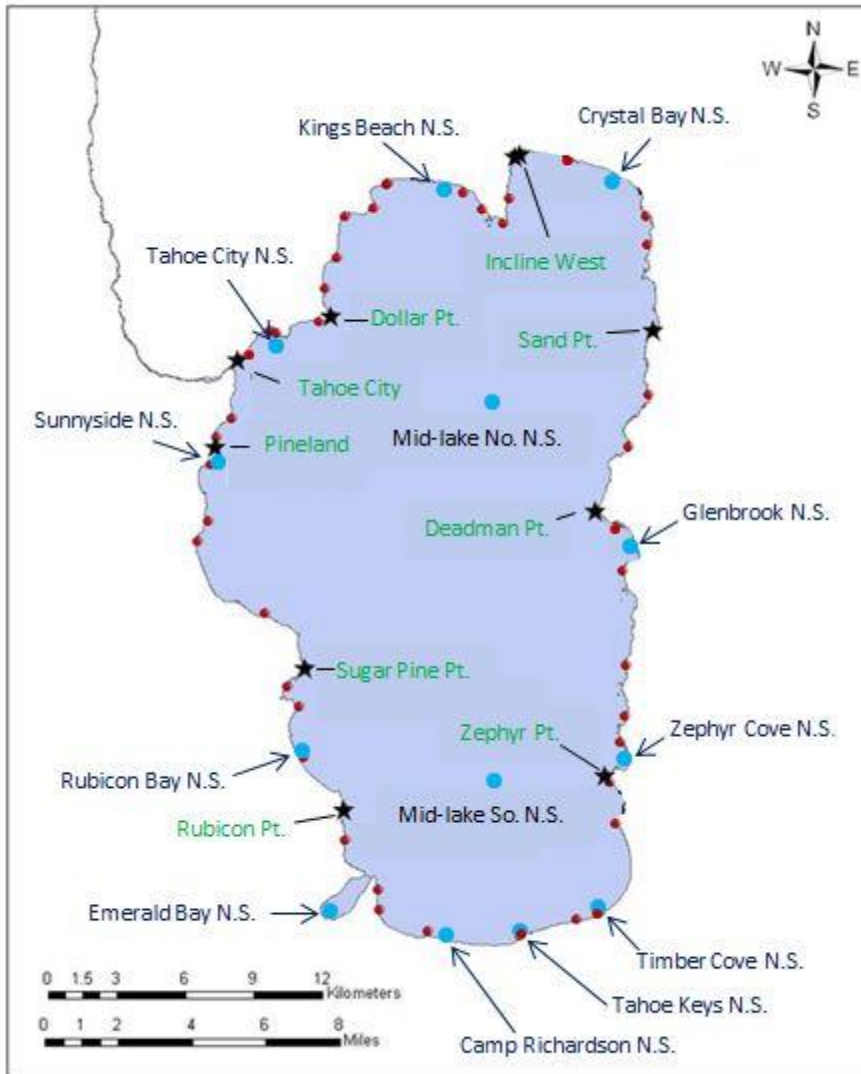


Figure 1. Map showing locations of AGP nearshore stations (light blue dots), routine periphyton monitoring stations (green text, black stars) and spring synoptic periphyton stations (red dots).

Table 1. Description of AGP and phytoplankton monitoring sites.

Site	Coordinates	Site Description	Water Depth at Station
<u>Nearshore Sites</u>			
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
<u>Mid-lake Sites</u>			
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:

$$\text{Chlorophyll } a \text{ } (\mu\text{g/l}) = (r/(r-1)) \times (R_b - R_a) \times V_{\text{ex}}/V_{\text{fil}}$$

$$\text{Pheophytin } (\mu\text{g/l}) = (r/(r-1)) \times (rR_a - R_b) \times V_{\text{ex}}/V_{\text{fil}}$$

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).

AGP Assay Results June 2017 - June 2018:

This report presents the results of 4 AGP assay tests that were done July, 2017 – June, 2018. 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.d 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 #17 (9/12/17)

This was a late summer experiment. The previous evening there were strong thunderstorms over portions of the lake with brief strong winds which may have impacted water quality at some sites. Water clarity was noted to be reduced at the Tahoe City and Tahoe Keys nearshore sites during sampling. Lake surface temperature ranged between 19.0-20.5 °C at the sampling sites. Initial lake chlorophyll *a* concentrations were moderately high at the sites (between 0.24 to 0.58 µg/l). Highest AGP chlorophyll *a* levels determined in the experiment were found for the nearshore site adjacent to the Tahoe Keys (0.74 µg/l) and the Tahoe City site (0.58 µg/l).

AGP Assay #18 (12/18/17)

This was winter experiment. Lake surface temperature ranged between 6.5-8.5 °C at the sites, with the coldest temperature measured in Emerald Bay. Initial lake chlorophyll *a* concentrations ranged between 0.56 to 0.83 µg/l in the main body of the lake, while Emerald Bay was higher at 1.05 µg/l and noted to have poor clarity. Levels of chlorophyll *a* did not increase during the experiment therefore, the initial chlorophyll *a* in lake water from sites was equivalent to the algal growth potential. This pattern has been observed in previous December AGP experiments.

AGP Assay #19 (3/28/18)

This early spring experiment followed a rain event the previous week which had resulted in increased stream inputs. Moderate winds accompanied the storm and east winds occurred a couple of days prior to sampling. Lake temperature ranged from 5.0°C in Emerald Bay to 6.5°C at many of the sites. Initial chlorophyll *a* was highly variable among sites. Sites along the west shore (Rubicon, Sunnyside, Tahoe City, Kings Beach) had lowest initial chlorophyll *a* levels ranging from < 0.1 µg/l to 0.28 µg/l; the mid-lake sites and Camp Richardson nearshore were slightly higher 0.33-0.39 µg/l, followed by sites along the north, south (east of Camp Richardson) and east shores ranging from 0.54-0.71 µg/l. Emerald Bay had the highest initial chlorophyll *a* (1.39 µg/l). Sites along the west shore showed substantial increases in chlorophyll *a* from initial levels, especially Rubicon Bay which increased to 1.20 µg/l. Highest levels of AGP were observed at Emerald Bay (same as initial chlorophyll *a* level of 1.39 µg/l), Zephyr Cove (1.23 µg/l) and Rubicon Bay (1.20 µg/l). It's possible there

Table 2. Summary of Lake Tahoe Algal Growth Potential Test results for nearshore and mid-lake sites, for samples collected 2017-2018.

	Date Collected	Time Collected	Lake Surface Temp. (°C)	Collection Depth (m)	Initial Chl <i>a</i> (µg/l)	Final AGP Results (Maximum Chl <i>a</i> Achieved) Chl. <i>a</i> ± s.d. (µg/l)
AGP#17						
Sunnyside	9/12/2017	12:25	20.5	1	.36±.04	.36 ± .04
Tahoe City	9/12/2017	7:55	19.5	1	.58±.04	.58 ± .04
Kings Beach	9/12/2017	8:47	19.5	1	.30±.02	.32 ± .01
Crystal Bay	9/12/2017	9:10	20.0	1	.31±.02	.33 ± .01
Glenbrook	9/12/2017	9:45	19.0	1	.30±.01	.30 ± .01
Zephyr Cove	9/12/2017	10:04	19.0	1	.28±.02	.34 ± .01
Timber Cove	9/12/2017	10:33	19.0	1	.28±.04	.39 ± .01
Tahoe Keys	9/12/2017	10:52	19.5	1	.56±.03	.74 ± .04
Camp Rich.	9/12/2017	11:05	NA	1	.33±.01	.34 ± .01
Emerald Bay	9/12/2017	11:28	20.0	1	.34±.06	.47 ± .01
Rubicon Bay	9/12/2017	12:00	20.5	1	.24±.01	.28 ± .01
Mid-lake North	9/12/2017	8:20	19.0	1	.29±.04	.29 ± .04
Mid-lake South	9/12/2017	10:20	19.5	1	.32±.00	.32 ± .00
AGP#18						
Sunnyside	12/8/2017	13:44	8.0	1	.67±.04	.67 ± .04
Tahoe City	12/8/2017	9:13	7.0	1	.61±.04	.61 ± .04
Kings Beach	12/8/2017	9:54	7.5	1	.75±.10	.75 ± .10
Crystal Bay	12/8/2017	10:15	8.0	1	.78±.08	.78 ± .08
Glenbrook	12/8/2017	10:50	8.0	1	.74±.03	.74 ± .03
Zephyr Cove	12/8/2017	11:14	8.0	1	.72±.04	.72 ± .04
Timber Cove	12/8/2017	11:44	7.0	1	.60±.01	.60 ± .01
Tahoe Keys	12/8/2017	12:00	7.5	1	.56±.01	.56 ± .01
Camp Rich.	12/8/2017	12:15	8.0	1	.67±.02	.67 ± .02
Emerald Bay	12/8/2017	12:43	6.5	1	1.05±.01	1.05 ± .01
Rubicon Bay	12/8/2017	13:14	8.0	1	.73±.02	.73 ± .02
Mid-lake North	12/8/2017	9:33	8.5	1	.83±.01	.83 ± .01
Mid-lake South	12/8/2017	11:30	8.0	1	.83±.02	.83 ± .02

Table 2 Continued

	Date Collected	Time Collected	Lake Surface Temp. (°C)	Collection Depth (m)	Initial Chl <i>a</i> (µg/l)	Final AGP Results (Maximum Chl <i>a</i> Achieved) Chl. <i>a</i> ± s.d. (µg/l)
AGP#19						
Sunnyside	3/28/2018	14:00	NA	1	0.21	.60 ± .05
Tahoe City	3/28/2018	9:10	5.5	1	0.13	.77 ± .01
Kings Beach	3/28/2018	10:10	6.0	1	.28±.01	1.00 ± .00
Crystal Bay	3/28/2018	10:30	5.8	1	0.66	.71 ± .02
Glenbrook	3/28/2018	11:05	6.0	1	.57±.02	.82 ± .01
Zephyr Cove	3/28/2018	11:30	6.5	1	0.71	1.23 ± .00
Timber Cove	3/28/2018	12:00	6.5	1	0.54	1.16 ± .03
Tahoe Keys	3/28/2018	12:20	6.5	1	0.59	.95 ± .04
Camp Rich.	3/28/2018	12:30	6.5	1	0.39	1.00 ± .15
Emerald Bay	3/28/2018	13:00	5.0	1	1.39	1.39
Rubicon Bay	3/28/2018	13:35	NA	1	0.05e	1.20 ± .03
Mid-lake North	3/28/2018	9:34	5.5	1	.33±.01	.48 ± .06
Mid-lake South	3/28/2018	11:50	6.5	1	0.37	.76 ± .00
AGP#20						
Sunnyside	6/8/2018	13:05	13.0	1	.08±.00	.14 ± .00
Tahoe City	6/8/2018	8:10	12.0	1	.22±.04	.22 ± .04
Kings Beach	6/8/2018	9:10	12.5	1	.17±.01	.17 ± .01
Crystal Bay	6/8/2018	9:35	14.0	1	.11±.01	.12 ± .01
Glenbrook	6/8/2018	10:20	14.0	1	.12±.01	.15 ± .01
Zephyr Cove	6/8/2018	10:40	14.5	1	.13±.02	.20 ± .00
Timber Cove	6/8/2018	11:15	15.5	1	.09±.01	.27 ± .01
Tahoe Keys	6/8/2018	11:30	14.8	1	.12±.00	.29 ± .03
Camp Rich.	6/8/2018	11:43	14.0	1	.12±.02	.14 ± .02
Emerald Bay	6/8/2018	12:15	17.0	1	.25±.01	.25 ± .01
Rubicon Bay	6/8/2018	12:40	15.5	1	.11±.01	.13 ± .00
Mid-lake North	6/8/2018	8:30	12.0	1	.13±.01	.13 ± .01
Mid-lake South	6/8/2018	10:50	14.0	1	.10±.02	.13 ± .00

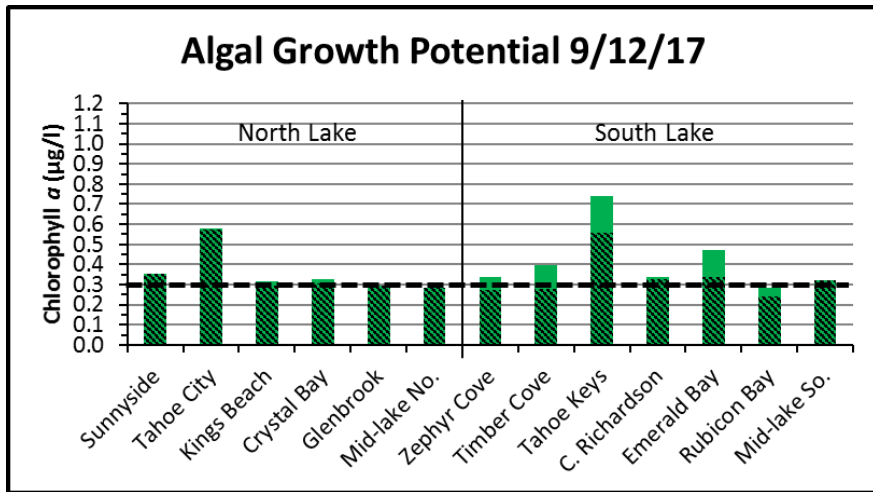


Figure 2a. 9/12/17 algal growth potential experiment. (In all figure 2 charts, dark shading is initial chlorophyll *a* concentration, light green is subsequent increase in chlorophyll *a* (if any) during experiment, total height of bar(s) (dark + light green) is algal growth potential, dashed line is mean of Mid-lake North and South AGP levels.)

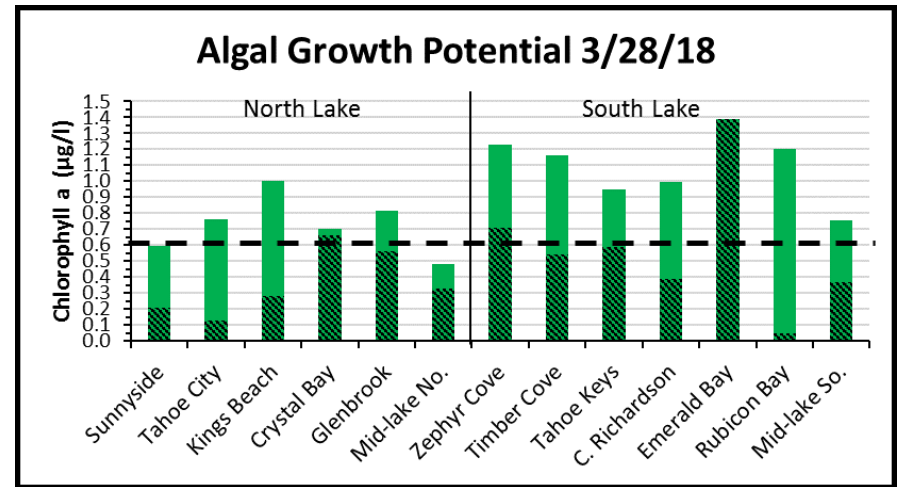


Figure 2c. 3/28/18 algal growth potential experiment.

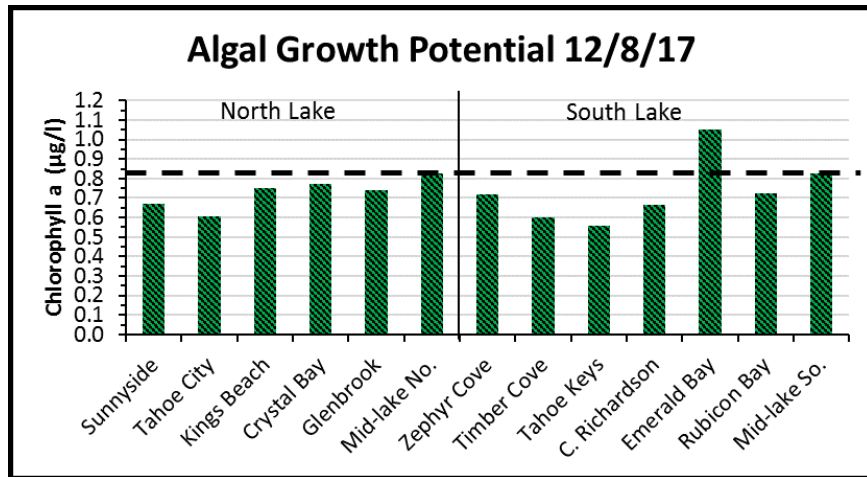


Figure 2b. 12/8/17 algal growth potential experiment.

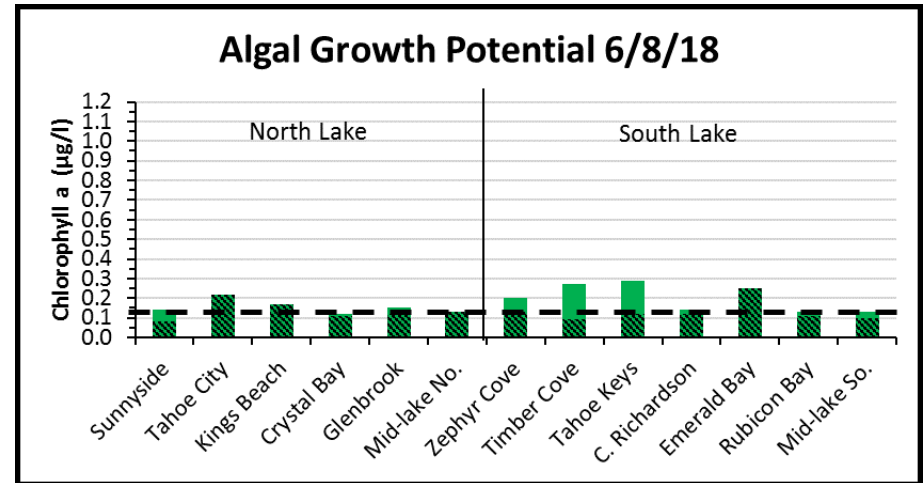


Figure 2d. 6/8/18 algal growth potential experiment.

may have been some impact of stream inputs from the large streams on the south shore (U. Truckee and Trout Cr.) as AGP at most south shore sites were among the higher values in this experiment. The high AGP in Emerald Bay, may reflect influence of inputs from Eagle Creek. The generally low levels of initial chlorophyll *a* along the west shore with subsequent increases during the experiment, may reflect impacts of wind on the distribution of algae and chlorophyll along the west shore.

AGP Assay #20 (6/8/18)

This was a sampling done near the end of the 2018 spring runoff. The most significant spring stream inputs had long since occurred (two months earlier) associated with a strong storm event in early April. Temperatures ranged from 12.0 to 15.5 °C in the main body of the lake and 17.0° C in Emerald Bay. Initial chlorophyll *a* levels were low at all sites, ranging from 0.08 µg/l at Sunnyside to 0.25 µg/l in Emerald Bay. AGP was also very low at all sites, with most sites showing very little increase in chlorophyll *a*. Timber Cove and Tahoe Keys had the highest AGP (which was still very low, 0.27 and 0.29 µg/l respectively). Reduced stream flows and stratifying lake conditions may have contributed to the generally low chlorophyll *a* in initial lake water at most sites and the generally low potential for additional algal growth.

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 2018. Table 3 presents the algal growth potential test results by date for monitoring sites, along with the mean annual values (all data for year) and mean annual values for tests done (May – Sept.).² 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 2017 for either all annual data or for the data May-Sept. Table 4 presents the results for the AGP standard using May – Sept. data. During calendar years 2014-2017, the Lahontan standard was only exceeded in one year, in 2015 at two stations: Tahoe City and Timber Cove.

² DWR in 1960's and 1970's typically calculated their annual means based on AGP tests during the May to Aug. period.

Table 3. Calendar Year 2017: 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 Chlorophyll <i>a</i> (µg/l)					2017 Annual Mean AGP	2017 May-Sept. Mean AGP	Annual Mean AGP/ Mid-lake Annual Mean AGP	May-Sept. Mean AGP/ May-Sept. Mid-lake Mean AGP
	3/10/2017	5/23/2017	6/28/2017	9/12/2017	12/8/2017				
Sunnyside	.65	.44	.36	.36	.67	0.50	0.39	1.06	1.13
Tahoe City	1.06	.72	.33	.58	.61	0.66	0.54	1.41	1.58
Kings Beach	.55	.64	.31	.32	.75	0.51	0.42	1.10	1.23
Crystal Bay	.50	.49	.33	.33	.78	0.49	0.38	1.04	1.12
Glenbrook	.72	.45	.33	.30	.74	0.51	0.36	1.09	1.05
Zephyr Cove	.65	.43	.40	.34	.72	0.51	0.39	1.09	1.14
Timber Cove	1.70	.48	.33	.39	.60	0.70	0.40	1.50	1.17
Tahoe Keys	1.38	.42	.29	.74	.56	0.68	0.48	1.45	1.41
Camp Rich.	.82	.33	.25	.34	.67	0.48	0.31	1.03	0.89
Emerald Bay	1.49	.54	.39	.47	1.05	0.79	0.47	1.68	1.36
Rubicon Bay	.69	.47	.32	.28	.73	0.50	0.36	1.06	1.04
<u>Mid-Lake:</u>									
Mid-lake No.	.46	.40	.34	.29	.83	0.46	0.34		
Mid-lake So.	.50	.41	.30	.32	.83	0.47	0.34		
Mean Mid-lk	.48	0.405	0.32	0.305	0.83	0.47	0.34		

Table 4. 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	2017
Sunnyside	1.35	1.33	0.66	1.13
Tahoe City	1.73	2.51*	0.99	1.58
Kings Beach	1.03	1.43	0.94	1.23
Crystal Bay	0.99	1.33	0.78	1.12
Glenbrook	1.02	1.11	0.81	1.05
Zephyr Cove	1.35	1.35	0.75	1.14
Timber Cove	1.39	2.65*	0.82	1.17
Tahoe Keys	1.47	1.47	0.94	1.41
Camp Rich.	1.55	1.25	0.74	0.89
Emerald Bay	1.31	1.31	0.85	1.36
Rubicon Bay	0.85	1.25	0.53	1.04

Patterns for Highest and Lowest AGP

AGP levels were ranked from highest to lowest for each experiment done Aug. 2013 to June, 2018 and the number of times the sites were in the “top 3” or “bottom 3” determined (Table 5). Emerald Bay, Tahoe Keys and Timber Cove were sites most frequently among the top 3 (highest AGP levels). Mid-lake North, Rubicon Bay and Mid-lake South were most frequently among the bottom 3 AGP levels.

Table 5. Number of experiments in which AGP for a site was in the top 3 highest AGP levels for an experiment and number of experiments for which it was among the lowest, in the bottom 3 AGP levels for an experiment. Data includes AGP experiments Aug., 2013 – June, 2018.

	# Experiments in Top 3 (Highest AGP Levels)		# Experiments in Bottom 3 (Lowest AGP Levels)
	<u>Total</u>		<u>Total</u>
Emerald Bay	12	Mid-lake North	10
Tahoe Keys	9	Rubicon Bay	10
Timber Cove	9	Mid-lake South	8
Tahoe City	7	Tahoe City	6
Zephyr Cove	6	Glenbrook	6
Mid-lake North	4	Camp Rich.	5
Mid-lake South	3	Sunnyside	5
Camp Rich.	2	Crystal Bay	4
Kings Beach	2	Timber Cove	4
Rubicon Bay	2	Tahoe Keys	2
Sunnyside	2	Zephyr Cove	2
Crystal Bay	1	Emerald Bay	1
Glenbrook	1	Kings Beach	1

Section II. Enumeration and Identification of Phytoplankton

With increased interest in the state of the nearshore, nearshore phytoplankton monitoring has been included as part of the Lake Tahoe Water Quality Investigations monitoring since 2013. Phytoplankton samples are 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 are 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).

This section summarizes the results for nearshore phytoplankton monitoring done from June to December, 2017.

Nearshore Phytoplankton Monitoring Results

Phytoplankton enumeration data for June, Sept. and Dec. 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, green algae, cyanophytes (cyanobacteria), haptophytes and euglenophytes) which are presented in Figures 3a-3f below.

In the June 28, 2017 sampling, diatoms dominated both the biovolume and abundance numbers at the sites. Total biovolumes were relatively low ranging from (39.03 mm³/m³) at Rubicon Bay to (118.75 mm³/m³) at Emerald Bay. Total abundance numbers were low to moderate and ranged from (73804 cells/ liter) at Timber Cove to (247681 cells/liter) at Tahoe City.

In the September 12, 2017 samples, total biovolume ranged from (42.82 mm³/m³) at Mid-lake North to 167.84 mm³/m³ at Tahoe City which are relatively low levels. Total abundance numbers were also low to moderate ranging from 60930 cells/liter at Glenbrook, to 264456 cells/liter at Mid-lake North. While algal biovolumes and abundances were dominated by diatoms in June 2017, diatoms were less dominant in September. At two sites (Zephyr Cove and Mid-lake South) green algae constituted a large portion of the biovolume (65% and 76%) of total biovolume respectively. At both those sites the primary green algae contributing to biovolume was *Botryococcus braunii*. Green algae also contributed strongly to cell abundances at many sites. Haptophytes and Chrysophytes also made contributions to overall cell abundances. Small amounts of cyanobacteria were also found at several of the sites in Sept. 2017. The two sites with the greatest abundances of cyanobacteria included the Tahoe Keys nearshore station (27530 cells/ liter, 11.79% of total cell numbers) and Rubicon (21924 cells/ liter and 11.13% of total cell numbers). Cyanobacteria along with green algae can be characteristic of more eutrophic waters, but again numbers and biovolumes were relatively low on this date.

In counts done for the September 12, 2017 samples, increased presence of one type of cyanobacteria known as *Dolichospermum spiroides* was observed at several sites. Figure 4a,b show photos of *Dolichospermum spiroides* from the Tahoe Keys nearshore. This alga was also observed at several other sites, along with another type of cyanobacteria known as *Phormidium*. Table 6 provides cell numbers and biovolumes for these species at sites where they were observed on this date.

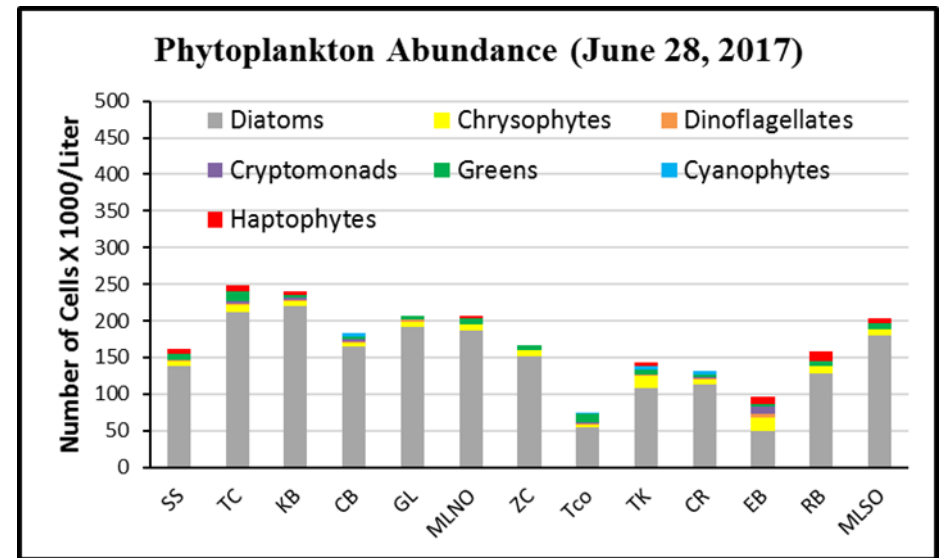
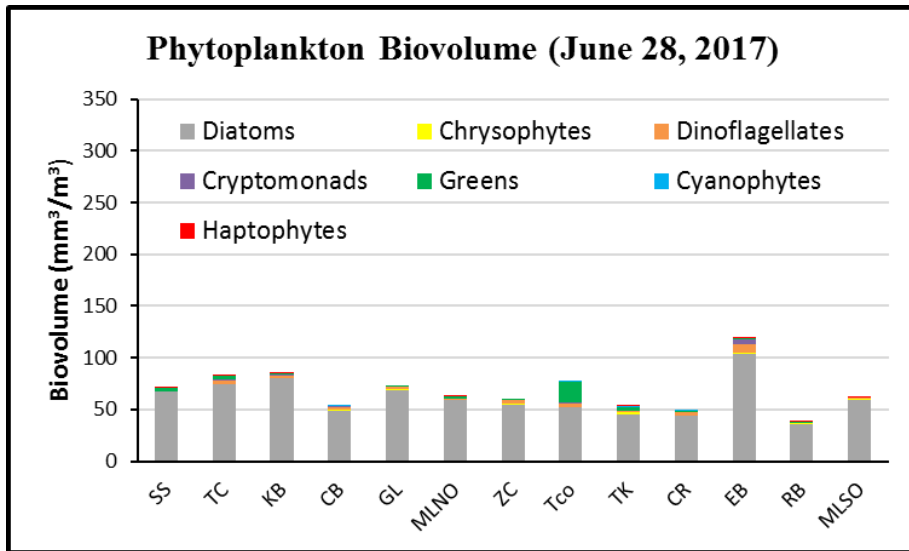


Fig. 3.a. Phytoplankton biovolume at nearshore sites 6/28/17. (Stations are shown along bottom in each graph and include: “SS”= Sunnyside; “TC”= Tahoe City; “KB”=Kings Beach; “CB”=Crystal Bay; “GL”=Glenbrook; “MLNo”=Mid-lake North; “ZC”=Zephyr Cove; “TCo”=Timber Cove; “TK”= Tahoe Keys nearshore; “CR”=Camp Richardson; “EB”=Emerald Bay; “RB”=Rubicon Bay; “MLSo”=Mid-lake South.)

Fig. 3.b. Phytoplankton abundance at nearshore sites 6/28/17.

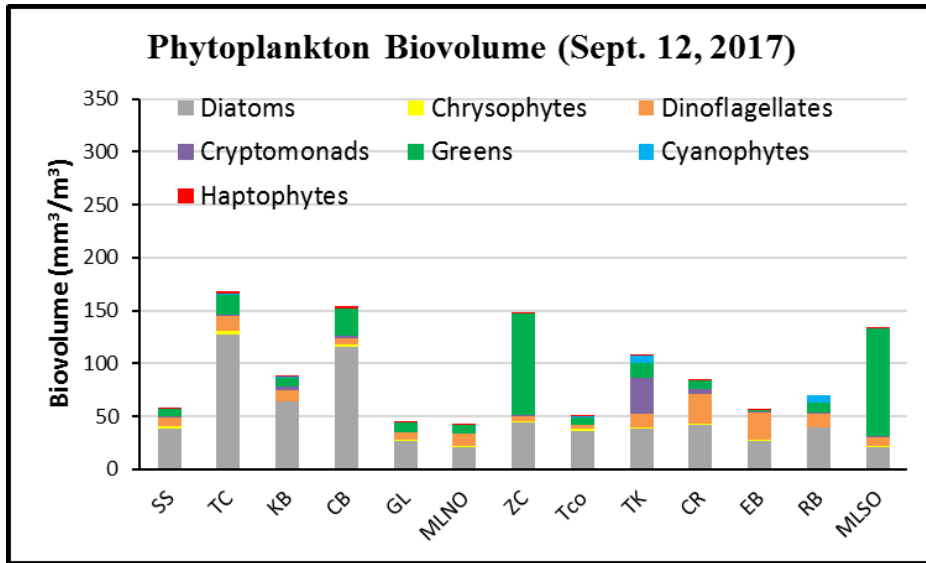


Fig. 3.c. Phytoplankton biovolume at nearshore sites 9/12/17.

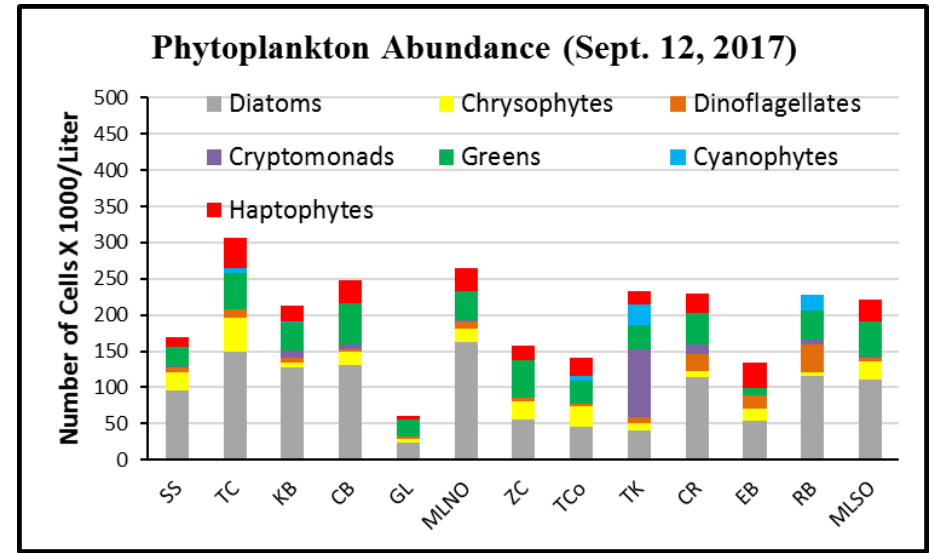


Fig. 3.d. Phytoplankton abundance at nearshore sites 9/12/17.

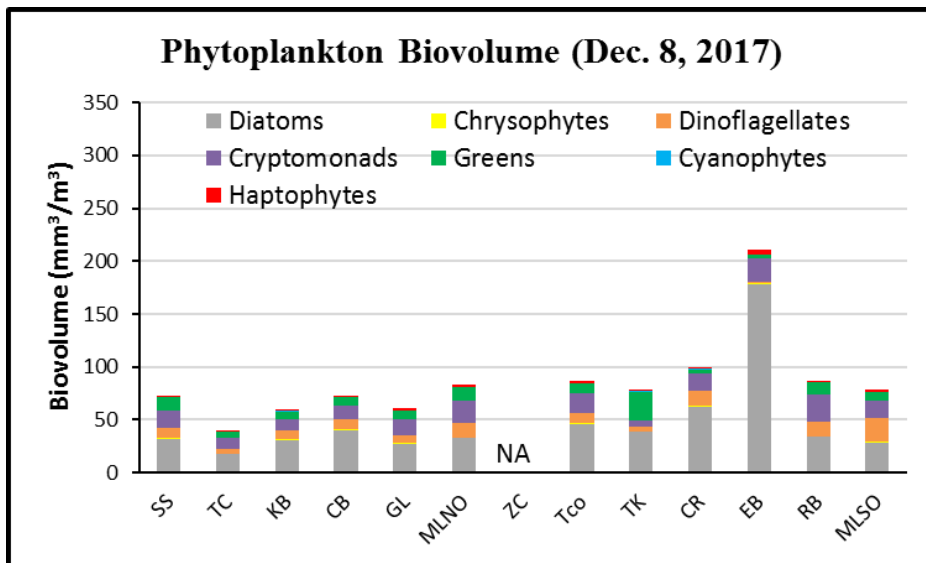


Fig. 3.e. Phytoplankton biovolume at nearshore sites 12/8/17.

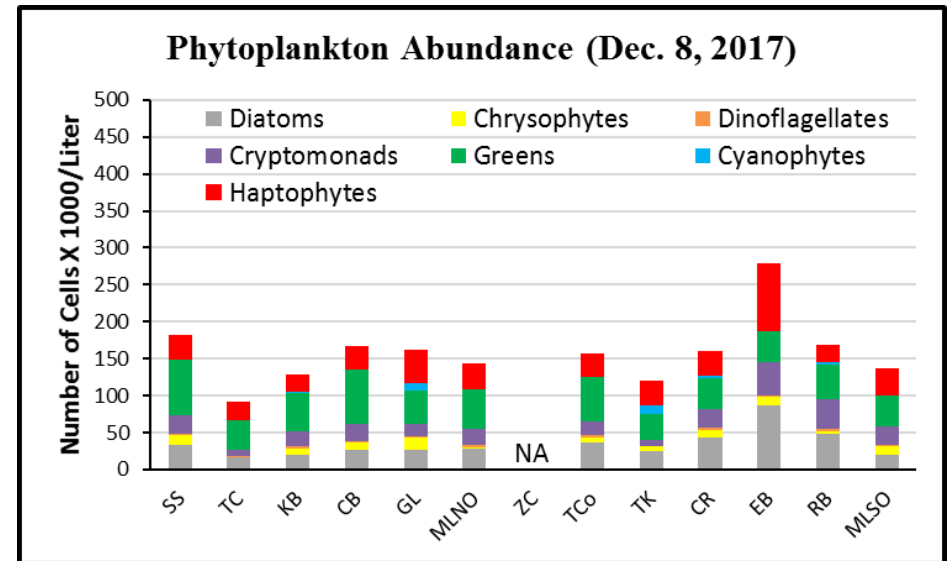


Fig. 3.f. Phytoplankton abundance at nearshore sites 12/8/17.



Figure 4 a,b. Light micrographs of the cyanobacteria *Dolichospermum spiroides*, observed in a sample collected from the Tahoe Keys nearshore station, 9/12/17. (a) Phase Contrast, 400x and (b) Differential Interference Contrast (DIC), 630x. Scale bar represent 20µm. Images by Lidia Tanaka, UC Davis TERC.

Table 6. Cyanobacteria was found at 5 of 11 nearshore sites during the 9/12/17 sampling and no cyanobacteria were found in the mid-lake samples. Cyanobacteria species, numbers and biovolumes are listed for the 5 sites.

Station	Species	Numbers Units/Liter	Numbers Units/ml	Biovolume mm ³ /m ³	Biovolume mm ³ /liter
Tahoe Keys Nearshore Sta. (So. Shore)	<i>Dolichospermum spiroides</i>	15414	15.414	5.54	0.00554
	<i>Phormidium sp.</i>	12116	12.116	0.85	0.00085
	Total	27530	27.53	6.39	0.00639
	% of Overall Sample	11.79%		5.94%	
Timber Cover Nearshore Sta. (So. Shore)	<i>Phormidium sp.</i>	6310	6.31	0.44	0.00044
	Total	6310	6.31	0.44	0.00044
	% of Overall Sample	4.47%		0.88%	
Rubicon Nearshore Site (South west Shore)	<i>Dolichospermum spiroides</i>	20097	20.097	7.22	0.00722
	<i>Phormidium sp.</i>	1827	1.827	0.13	0.00013
	Total	21924	21.924	7.35	0.00735
	% of Overall Sample	11.13%		10.46%	
Tahoe City Nearshore Site	<i>Dolichospermum spiroides</i>	3509	3.509	1.26	0.00126
	<i>Phormidium sp.</i>	2644	2.644	0.19	0.00019
	Total	6153	6.153	1.45	0.00145
	% of Overall Sample	2.00%		0.86%	
Kings Beach (North west Shore)	<i>Dolichospermum spiroides</i>	959	0.959	0.34	0.00034
	Total	959.02	0.959	0.3486	0.00034
	% of Overall Sample	0.45%		0.39%	

Interestingly, in the summer of 2017, a bloom of cyanobacteria occurred within portions of the Tahoe Keys lagoons (see: <https://www.tahoedailytribune.com/news/local/low-levels-of-toxic-algae-remain-in-keys/>). The bloom was a concern due to the potential for the algae involved to produce certain algal toxins. Precautions for contact by people and pets with the cyanobacteria were taken, along with increased monitoring by the Tahoe Keys and Lahontan. One of the cyanobacteria identified in the bloom in the Tahoe Keys lagoons was *Dolichospermum* (see https://www.waterboards.ca.gov/lahontan/water_issues/programs/tahoe_keys_weed_control/docs/TKPOA_Cyanobacteria_Eval_2017.pdf). *Dolichospermum spiroides* was observed in our nearshore monitoring on Sept. 12, 2017, adjacent to the Tahoe Keys. Whether there was a link between the low numbers of *Dolichospermum spiroides* found in the nearshore adjacent to Tahoe Keys and the bloom of cyanobacteria which included *Dolichospermum* in the Tahoe Keys lagoons is uncertain. This was because small amounts of *Dolichospermum spiroides* were also observed elsewhere in the nearshore around Lake Tahoe including at Rubicon Bay, Tahoe City and Kings Beach. In our monitoring of nearshore phytoplankton since summer of 2013 we have observed *Dolichospermum spiroides* only one other time and that was in 9/1/15 when small amounts of *Dolichospermum spiroides* were also found at the Tahoe Keys nearshore station.

In the December 8, 2017 samples, algal biovolumes were relatively low ($\leq 100 \text{ mm}^3/\text{m}^3$) at sites in the main body of the lake, while in Emerald Bay, they were about twice as high (slightly more than $200 \text{ mm}^3/\text{m}^3$). Diatoms comprised near half or more of the biovolumes at the sites in December. Cell abundances in the main body of the lake ranged from 92313 cells/liter at Tahoe City to 278799 cells/liter in Emerald Bay. Green algae, cryptomonads and haptophytes combined contributed the greatest proportion of cell numbers relative to the other groups combined in Dec. 2017. Green algae contributed 15% to 44% the abundances in December 2017.

Species Richness

Species richness (number of different species) at a site provides can provide some indication of the trophic state of waters. Heyvaert et al., (2013) provide 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. Table 7 shows the mean numbers of species for nearshore stations for all samples collected August 2013 to Dec. 2017. The mean levels for number of species Aug. 2013 – Dec. 2017 are within the oligotrophic range. Tahoe City had the greatest mean number of species for samples (34 ± 7 species), followed by Tahoe Keys nearshore (32 ± 6 species), three other sites shared third highest number of species (28 species) (Emerald Bay, Camp Richardson and Kings Beach. The lowest number of species per site were measured at the two mid-lake stations (Mid-lake No. and Mid-lake So. which had 21 ± 6 and 22 ± 5 species respectively) followed by Rubicon Pt. which had a mean number of 23 species.

Table 7. Mean number of phytoplankton species \pm Std. Dev. (S.D.) for phytoplankton samples Aug. 2013 – Dec. 2017.

	2013-2017 Number of Species/ Date Mean \pm S.D. (n)
Tahoe City	34 \pm 7 (18)
Tahoe Keys	32 \pm 6 (18)
Emerald Bay	28 \pm 7 (17)
Camp Richardson	28 \pm 5 (17)
Kings Beach	28 \pm 4 (18)
Glenbrook	27 \pm 5 (18)
Timber Cove	27 \pm 5 (17)
Sunnyside	26 \pm 4 (18)
Crystal Bay	25 \pm 4 (18)
Zephyr Cove	25 \pm 4 (17)
Rubicon Bay	23 \pm 6 (17)
Mid-lake South	22 \pm 5 (18)
Mid-lake North	21 \pm 6 (18)

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).

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 8 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 8. 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; W119 57.68
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, samples from many sites 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 January 2 to July 25, 2018. This year, a fall sampling was not done. Two winter samplings were done in January and February, two spring samplings (March and April/May) along with a summer sampling in July. Nine routine sites were sampled. Table 9 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 5 (a-i) together with earlier data collected since 2000. Figure 6 presents a graph of lake surface elevation and 0.5m sampling elevation Jan. 2000-October, 2018.

Water Year 2018 Patterns of Periphyton Biomass

In WY 2018 moderate to high spring peaks in periphyton biomass were observed at several west shore sites, while biomass at sites along the east shore remained low. In the initial sampling in January, biomass was moderate at sites along the northwest shore: Pineland (33.42 mg/m²), Tahoe City (23.64 mg/m²) and Dollar Pt. (20.44 mg/m²) while and low at all other sites. By April, moderate to high spring peaks were observed at three west shore sites: Dollar Pt. (39.14 mg/m²), Rubicon Pt. (73.41 mg/m²) and Tahoe City (89.48 mg/m²). Incline West in the north portion of the lake, showed a small peak in biomass in April (15.69 mg/m²). At Pineland the spring biomass was slightly lower (24 and 20 mg/m² in Mar and April respectively) than in observed in January. At the 3 sites along the east shore (Sand Pt., Deadman Pt. and Zephyr Pt.) and Sugar Pine Pt. along the west shore, biomass remained relatively low through July. In July biomass was relatively low at all sites.

WY 2018 was a year in which precipitation inputs were sufficient to maintain a relatively high lake surface elevation throughout the sampling period. Precipitation was near or slightly below average in the Tahoe region based on maps in DWR (2018). The lake surface elevation remained high, between 6227.74 -6229.03 ft. from spring 2017 through mid-summer 2018 (Figure 6). There were a couple of strong storms which would have contributed nutrients to the lake in mid-November and in early April both through surface and subsurface runoff.

In the sampling record since 2000, 2017 and 2018 were the only years in which samples were collected two years in a row at near maximum lake level. The sustained high lake level in 2018 likely had ramifications for periphyton growth at 0.5m. Rock substrate at 0.5m in 2018 remained submerged throughout the year and allowing the periphyton community to develop for over a year. This was different from WY 2017 in which rapid rises in lake level occurred, with rock at 0.5m on several sampling dates being relatively recently submerged. In 2017 most sites at 0.5m during the spring peak had low levels of periphyton growth. In 2018, moderate to high levels of periphyton biomass were observed at several west shore sites.

Table 9. 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 January, 2017- July, 2018. 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; D= diatom mix; “-f” indicates algae type best estimate based on field observation; “-m” indicates predominant algae types checked under microscope.

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.	1/2/18	0.5	6226.10	3.62	0.55	NA	NA	2	2	<0.1	30%	<0.03	D,SD,CY-m
Rubicon Pt.	2/6/18	0.5	6226.32	3.78	0.13	NA	NA	2	1	<0.1	NA	NA	D,CY-m
Rubicon Pt.	3/29/18	0.5	6226.95	17.63	6.49	9.30	4.43	3	3	1.6	98%	1.57	SD,CY-m
Rubicon Pt.	4/25/18	0.5	6227.01	73.41	7.89 (n=3)	27.65	2.72 (n=3)	4	4	2.8	100%	2.80	SD-m
Rubicon Pt.	4/25/18	1.5	6223.73	NA	NA	NA	NA	NA	NA	1.5	80%	1.20	FG,CY-f
Rubicon Pt.	7/25/18	0.5	6227.01	7.69	2.44	4.42	1.78	1.5	2	0.3	60%	0.18	D,CY,FG-m
Sugar Pine Pt.	1/2/18	0.5	6226.10	NES	NES	NES	NES	NA	1	0	0%	0.00	
Sugar Pine Pt.	2/6/18	0.5	6226.32	NES	NES	NES	NES	1	1	0	0%	0.00	
Sugar Pine Pt.	3/29/18	0.5	6226.95	5.15	0.33	2.54	0.24	NA	2.5	0.3	90%	0.27	SD-m
Sugar Pine Pt.	4/25/18	0.5	6227.01	10.15	0.46	5.38	0.28	2	2	1.0	90%	0.90	SD-m
Sugar Pine Pt.	4/25/18	1.5	6223.73	NA	NA	NA	NA	NA	NA	1.0	80%	0.80	FG,SD-f
Sugar Pine Pt.	7/25/18	0.5	6227.01	NES	NES	NES	NES	1	1	<0.01	10%	0.01	SD,D-m
Pineland	1/2/18	0.5	6226.10	33.42	2.02	13.76	0.94	2	3	0.4	60%	0.24	D,SD,CY,FGm
Pineland	2/6/18	0.5	6226.32	5.39	1.13	1.75	0.72	3	2.5	0.1	70%	0.07	SD,FG,CY-m
Pineland	3/29/18	0.5	6226.95	24.10	5.32 (n=3)	13.64	3.96 (n=3)	3	3	0.7	61%	0.43	SD-m
Pineland	4/26/18	0.5	6227.02	20.55	5.45 (n=3)	20.40	5.67 (n=3)	3.5	3.5	1.0	69%	0.69	SD,CY,FG-m
Pineland- Rock A	4/26/18	0.8	6226.04	NA	NA	NA	NA	NA	NA	2.5	100%	2.50	
Pineland	4/26/18	1.0	6225.38	NA	NA	NA	NA	NA	NA	3.5	100%	3.50	SD,FG-f
Pineland	4/26/18	1.5	6223.74	NA	NA	NA	NA	NA	NA	2.5	65%	1.63	SD,FG-f
Pineland	7/25/18	0.5	6227.01	11.07	0.16	11.69	4.33	2	2.5	0.1	50%	0.05	D,FG-m
Tahoe City	1/2/18	0.5	6226.10	23.64	4.33	20.98	0.82	2	3	0.4	80%	0.32	SD-m
Tahoe City	2/6/18	0.5	6226.32	57.92	1.47 (n=3)	43.09	5.06 (n=3)	3	3	0.8	80%	0.64	SD,D-m
Tahoe City	3/29/18	0.5	6226.95	62.54	8.94 (n=3)	45.71	6.57 (n=3)	3	3.5	1.2	90%	1.08	SD,D-m

<u>Site Name</u>	<u>Date</u>	<u>Samp. Depth (m)</u>	<u>Samp. Elev. (ft)</u>	<u>Chl a (mg/m²)</u>	<u>Std Dev (mg/m²)</u>	<u>AFDW (g/m²)</u>	<u>Std Dev (mg/m²)</u>	<u>Above Visual Score</u>	<u>Below Visual Score</u>	<u>Fil. Length (cm)</u>	<u>Algal Cover. %</u>	<u>Biomass Index</u>	<u>Algal Type</u>
Tahoe City	4/26/18	0.5	6227.02	89.48	38.90 (n=3)	61.63	22.12 (n=3)	4	4	3.0	95%	2.85	SD-m
Tahoe City	4/26/18	1.5	6223.74	NA	NA	NA	NA	NA	NA	2.0	40%	0.80	SD-f
Tahoe City	7/25/18	0.5	6227.01	16.92	4.00	9.97	6.02	2	2	0.1	95%	0.10	D,FG-m
Dollar Pt.	1/2/18	0.5	6226.10	20.44	3.21	7.29	0.44	2	2	0.3	40%	0.12	CY,D-m
Dollar Pt.	2/6/18	0.5	6226.32	16.93	0.84	7.87	0.99	2	2.5	0.6	33%	0.20	CY,D-m
Dollar Pt.	3/29/18	0.5	6226.95	17.23	1.91	9.01	0.23	2.5	2.5	0.2	90%	0.18	SD,CY,D-m
Dollar Pt.	4/26/18	0.5	6227.02	39.14	9.40 (n=3)	24.45	5.04 (n=3)	2	3	1.5	80%	1.20	SD,D-m
Dollar Pt.	7/25/18	0.5	6227.01	3.94	0.58	NES	NES	1.5	2	<0.1	80%	0.08	CY-m
Incline West	1/2/18	0.5	6226.10	3.96	0.90	2.26	0.90	2	2	<0.1	40%	<0.04	CY,D,SD-m
Incline West	2/6/18	0.5	6226.32	1.62	0.03	NES	NES	1	2	0.2	60%	0.12	CY,D-m
Incline West	3/29/18	0.5	6226.95	12.37	1.99	6.94	1.09	2	3	0.4	90%	0.36	CY,SD,D-m
Incline West	5/10/18	0.5	6227.11	15.69	2.41	12.50	1.38	2	3	1.0	80%	0.80	SD,CY-m
Incline West	7/25/18	0.5	6227.01	13.32	3.58	7.48	1.13	2	2	0.2	50%	0.10	D,FG,CY-m
Sand Pt.	1/2/18	0.5	6226.10	3.32	0.47	4.13	0.75	1.5	1.5	<0.1	60%	<0.06	CY,D,SD,FGm
Sand Pt.	2/6/18	0.5	6226.32	1.81	0.11	NES	NES	1	2	0.1	60%	0.06	CY,D,SD,FGm
Sand Pt.	3/29/18	0.5	6226.95	4.16	0.93	3.79	0.15	2	2	0.3	50%	0.15	CY,D-m
Sand Pt.	5/10/18	0.5	6227.10	3.36	0.93	5.45	4.34	2	2.5	0.3	80%	0.24	SD,CY-m
Sand Pt.	5/10/18	1.5	6223.82	NA	NA	NA	NA	NA	NA	1.0	50%	0.50	FG,SD-f
Sand Pt.	7/25/18	Near Surf	6228.74	17.70	2.11	19.96	1.25	4	NA	2.5	NA	NA	SD-m
Sand Pt.	7/25/18	0.5	6227.01	6.35	0.08	4.61	0.87	NA	2	0.3	40%	0.12	D,CY-m
Deadman Pt.	1/2/18	0.5	6226.10	3.81	2.36	NES	NES	1.5	1.5	<0.1	80%	<0.08	SD,CY,FG-m
Deadman Pt.	2/6/18	0.5	6226.32	4.33	1.80	8.12	(n=1)	1	1	<0.1	50%	<0.05	CY,D-m
Deadman Pt.	3/29/18	0.5	6226.95	6.63	1.10	8.43	1.69	2	2	0.1	80%	0.08	CY,D-m
Deadman Pt.	5/10/18	0.5	6227.10	2.98	0.76	NES	NES	1.5	2	0.1	50%	0.05	SD,CY-m
Deadman Pt.	7/25/18	0.5	6227.01	10.21	1.35	11.89	1.17	NA	NA	1.0	40%	0.40	SD,FG,CY-m
Zephyr Pt.	1/2/18	0.5	6226.10	6.42	0.83	3.95	0.81	NA	NA	<0.1	80%	<0.08	D,CY-m
Zephyr Pt.	2/6/18	0.5	6226.32	9.06	2.06	3.96	0.13	2	2	0.2	40%	0.08	FG,D,CY-m
Zephyr Pt.	3/29/18	0.5	6226.95	9.55	2.28	5.04	1.65	3	2	0.2	100%	0.20	SD,D,CY-m
Zephyr Pt.	5/15/18	0.5	6227.16	8.24	0.50	8.24	0.73	2	2	0.3	90%	0.27	CY,SD,FG-m
Zephyr Pt.	7/25/18	0.5	6227.01	7.63	4.59	4.98	3.24	1	2	0.3	60%	0.18	D,CY

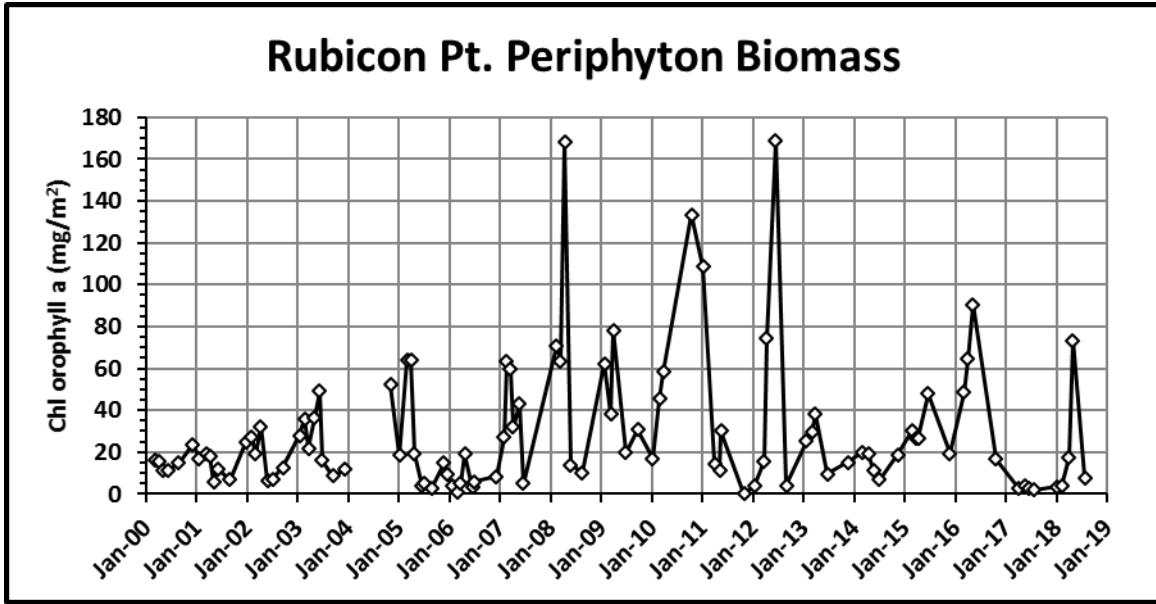


Figure 5 a. Rubicon Pt. periphyton biomass (chlorophyll *a*) 2000-2018.

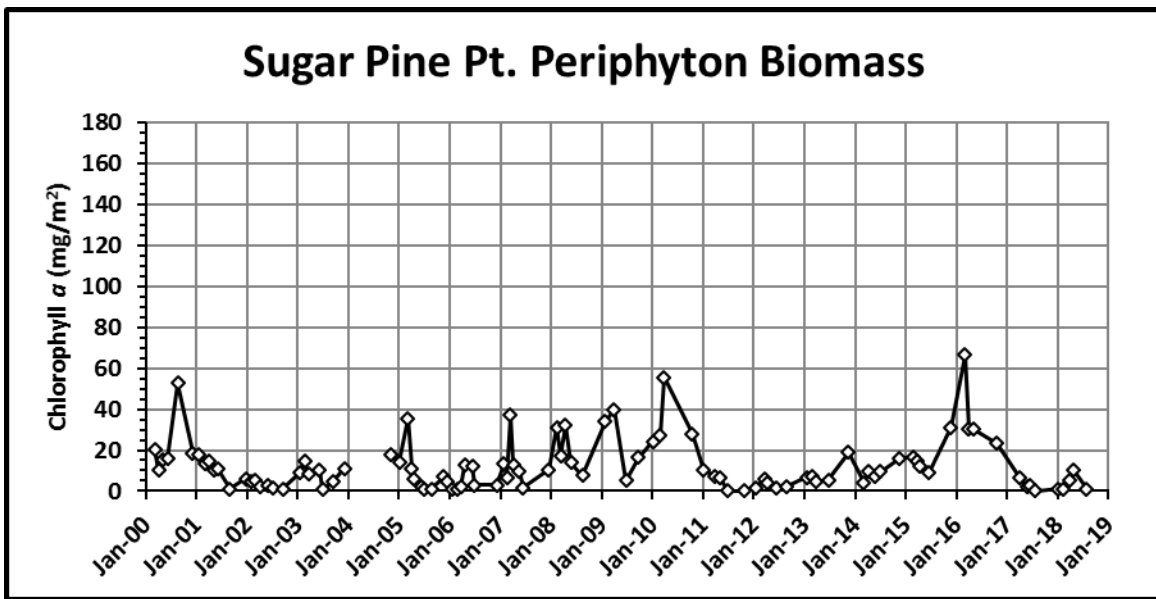


Figure 5 b. Sugar Pine Pt. periphyton biomass (chlorophyll *a*) 2000-2018.

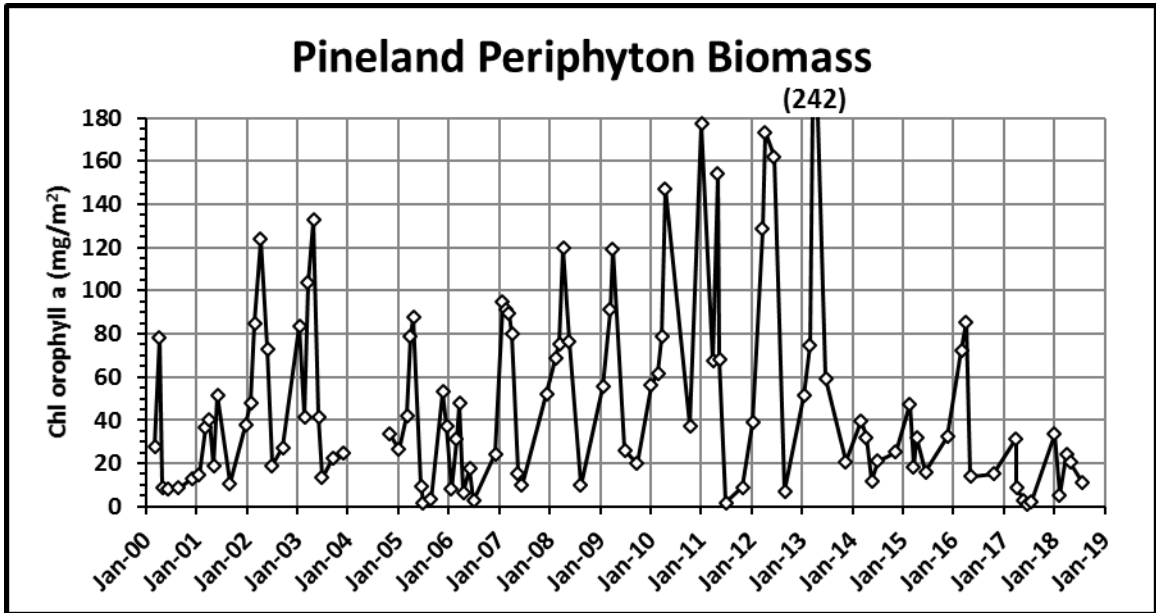


Figure 5 c. Pineland periphyton biomass (chlorophyll *a*) 2000-2018.

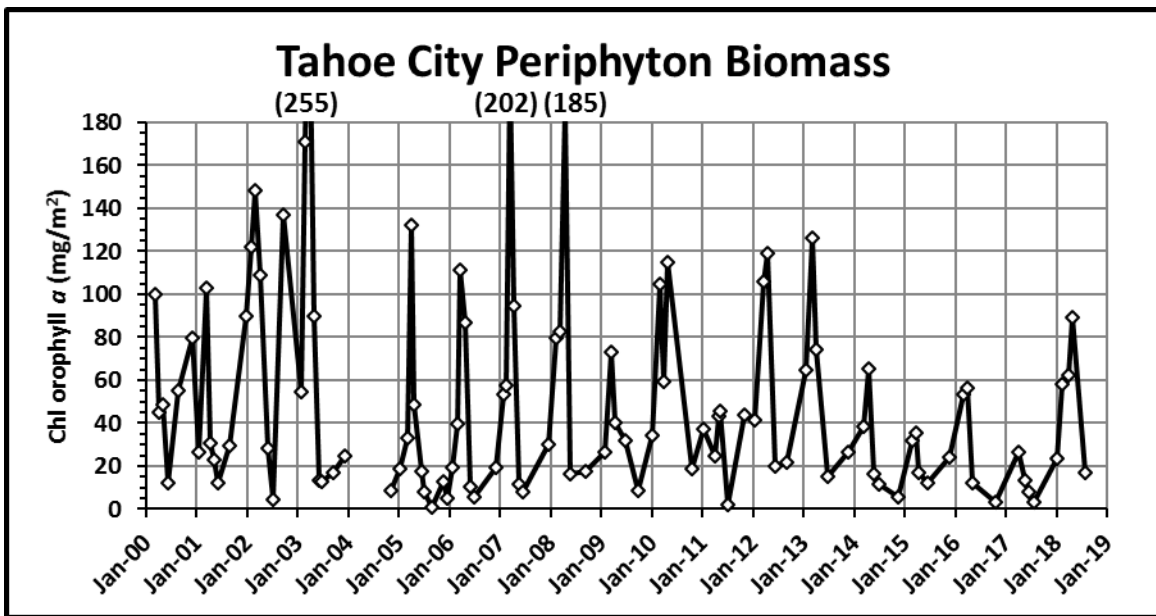


Figure 5 d. Tahoe City periphyton biomass (chlorophyll *a*) 2000-2018.

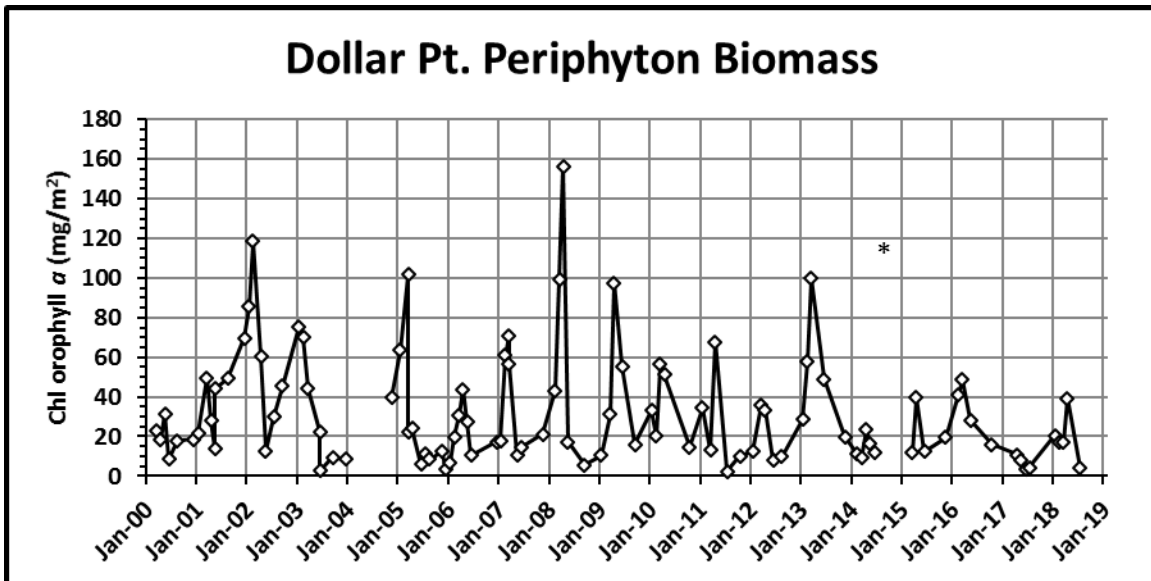


Figure 5 e. Dollar Pt. periphyton biomass (chlorophyll *a*) 2000-2018. *Note- the chlorophyll data for 11/11/14 was considered anomalous and not included in the long-term data.

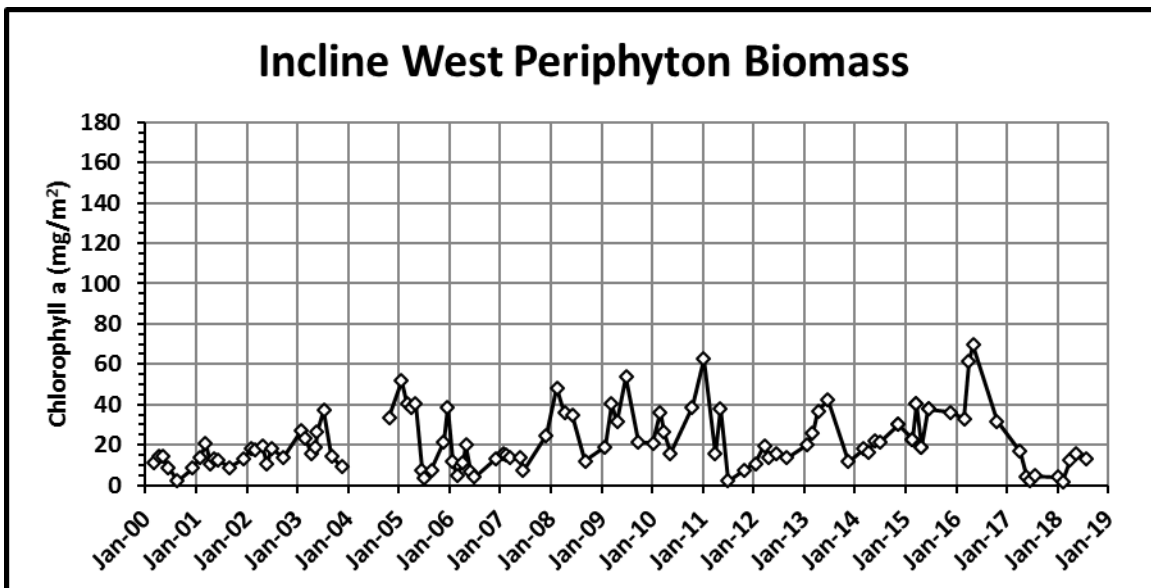


Figure 5 f. Incline West periphyton biomass (chlorophyll *a*) 2000-2018.

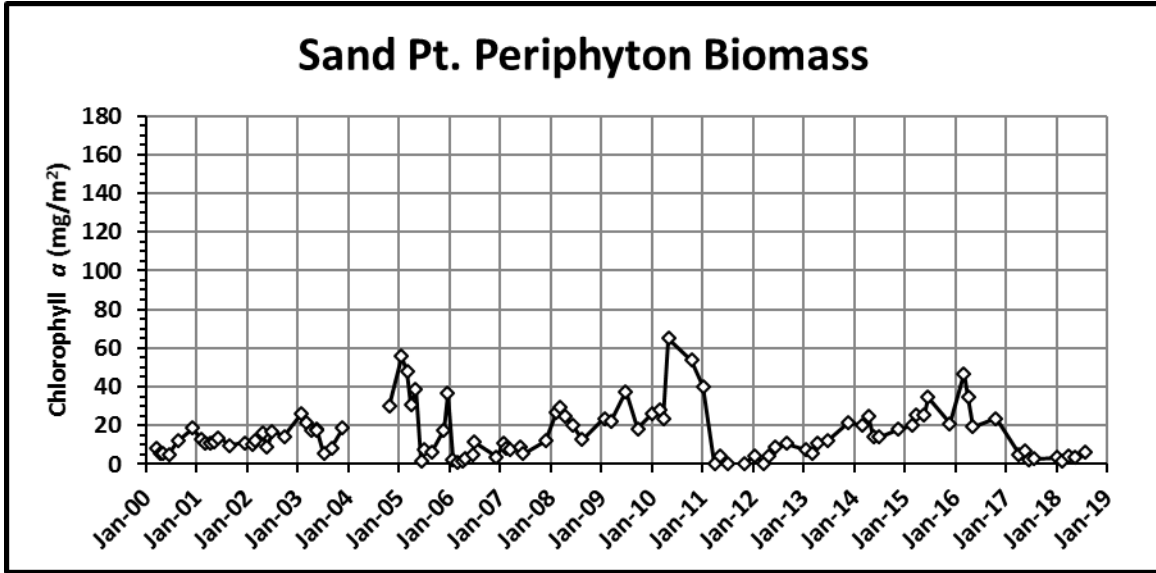


Figure 5 g. Sand Pt. periphyton biomass (chlorophyll *a*) 2000-2018.

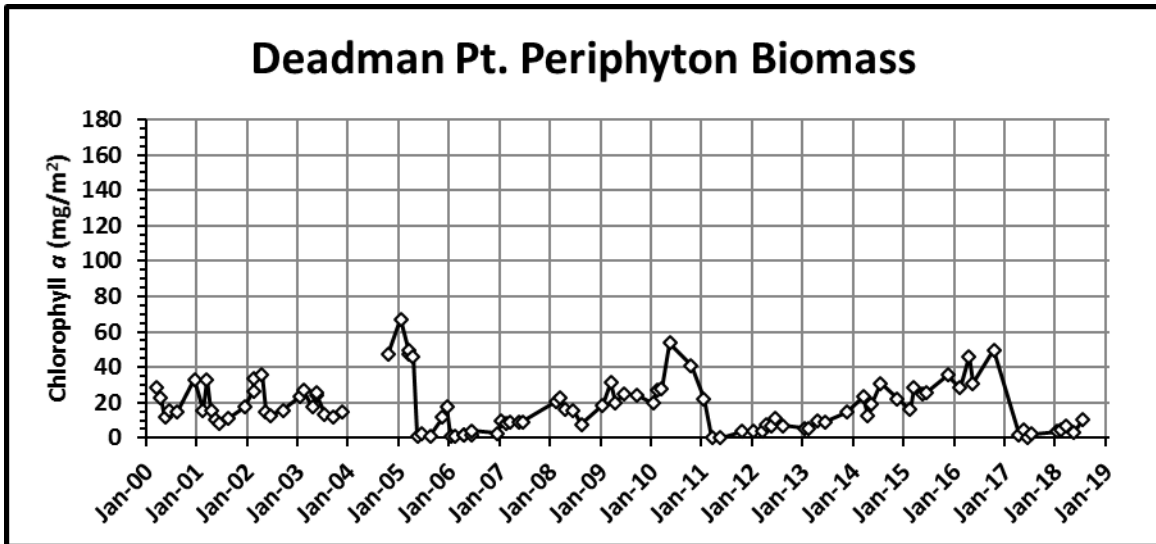


Figure 5 h. Deadman Pt. periphyton biomass (chlorophyll *a*) 2000-2018.

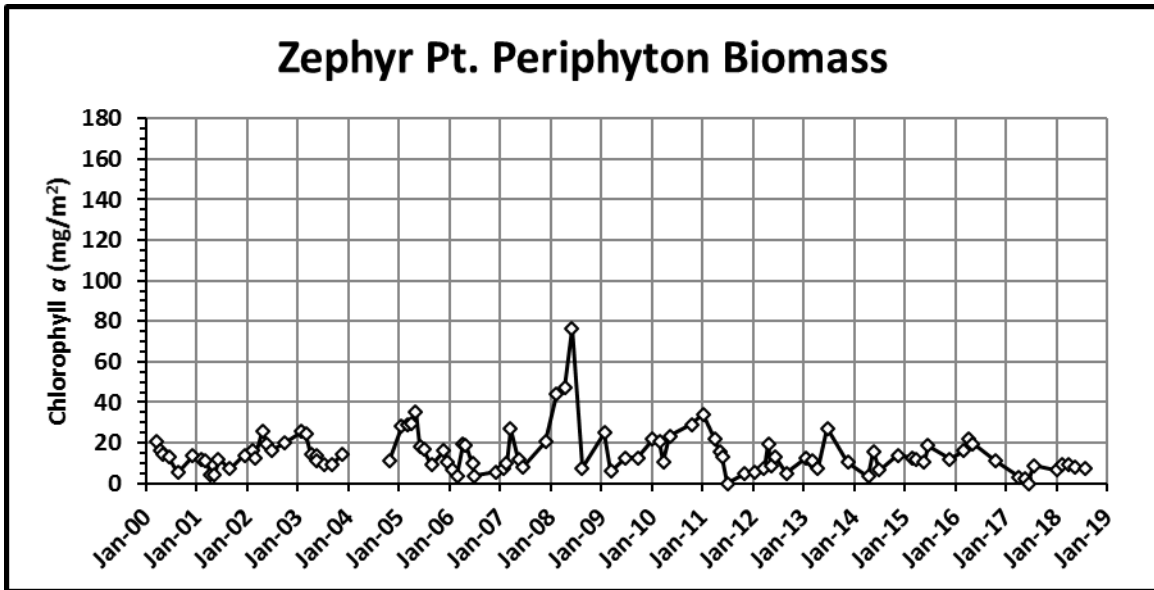


Figure 5 i. Zephyr Pt. periphyton biomass (chlorophyll *a*) 2000-2018.

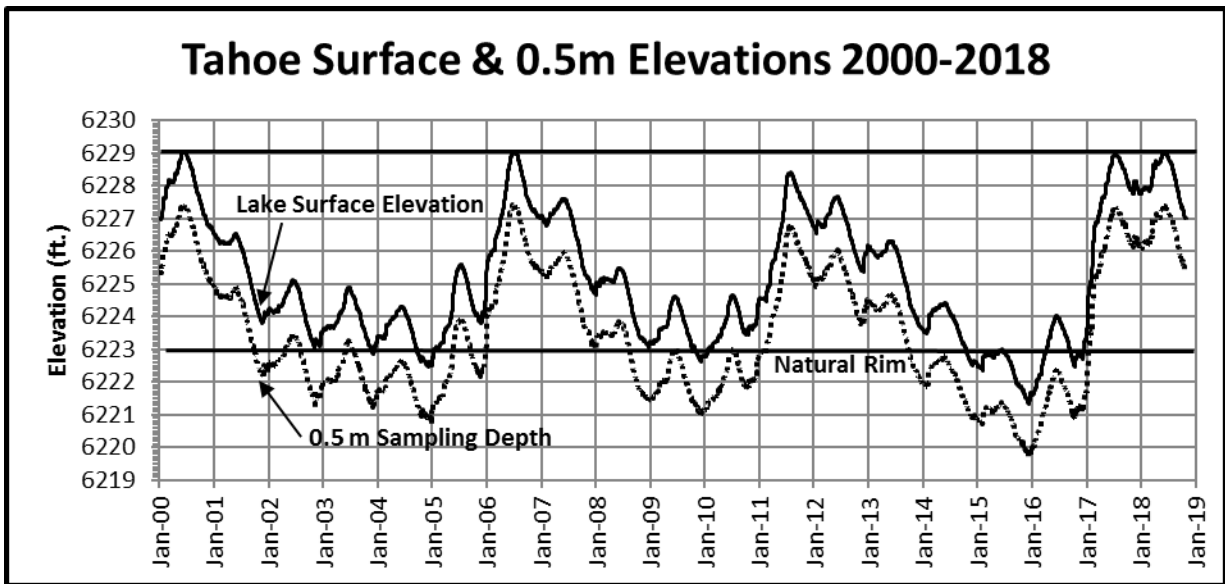


Figure 6. Fluctuation in Lake Tahoe surface elevation 1/1/00-10/28/18. Periphyton samples were typically collected during the period from natural rock substrata at a depth of 0.5m below the water surface. The 0.5m sampling depth (shown as a dotted line) fluctuates with the lake surface elevation. The 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>).

Microscopic observation of the samples indicated that both stalked diatoms and cyanobacteria were present in many of the samples in 2018. Stalked diatoms were noted to be prevalent at many sites in the spring 2018. While the stalked diatoms are generally considered to be able to colonize relatively rapidly on substrate in the eulittoral zone, the cyanobacteria have generally been considered slower growing algae that establish stable communities, slightly deeper in the sublittoral zone. The sustained high lake levels likely allowed sufficient time for the cyanobacteria to establish on the rocks at 0.5m along with the stalked diatoms. Some examples of stalked diatoms and cyanobacteria from the routine sites in 2018 are in Figures 7a-c.



Figure 7 a. Stalked diatoms (likely *Gomphoneis herculeana*) from Deadman Pt. 0.5m Mar. 2018

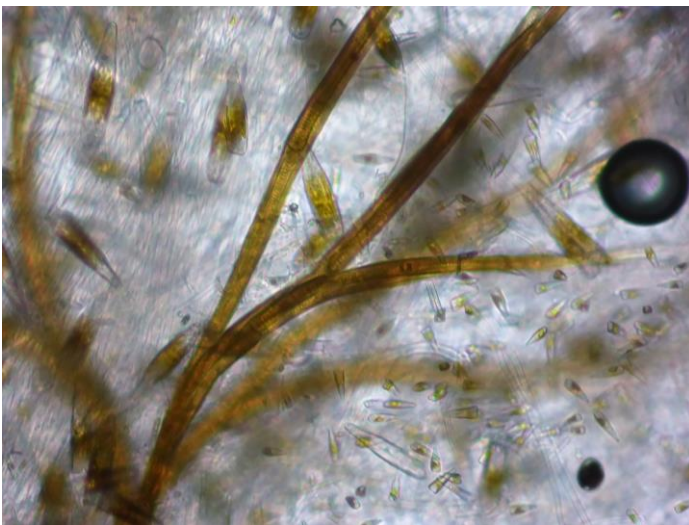


Figure 7 b. Mix of large and small stalked diatoms and cyanobacteria (dark-colored filaments) from Rubicon Pt. 0.5m, Mar. 2018

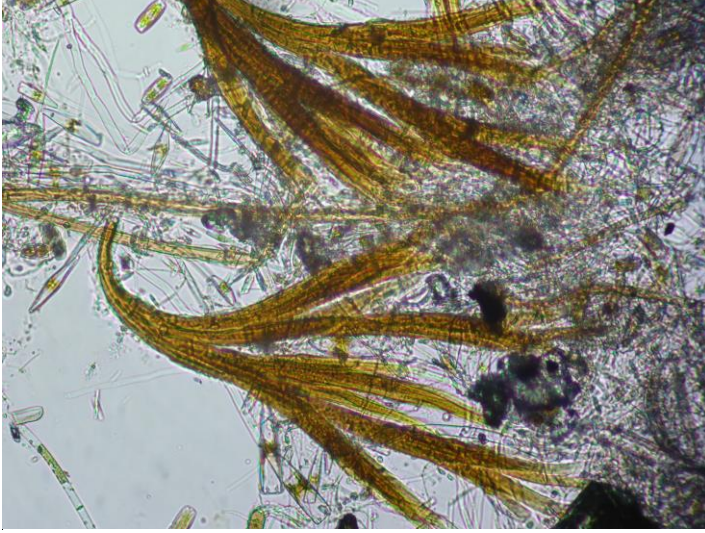


Figure 7 c. Incline West cyanobacteria, 0.5m, Jan. 2018.

Annual Maximum Biomass

Figure 8 presents the maximum periphyton chlorophyll *a* biomass for water years 2016-2018. Sites with the highest peak biomass in 2018 included Rubicon, Pineland, Tahoe City and Dollar Pt along the west shore. At Tahoe City, the peak biomass in 2018 was the highest of the last three years. At Dollar Pt. and Rubicon Pt. the peak biomass was much higher in 2018 than in 2017 but slightly less than 2016. At Pineland, peak spring biomass at 0.5m in 2018 was similar to that observed in 2017 and much lower than that observed in 2016. Peak periphyton biomass levels at 0.5m have been relatively low the past 5 years at Pineland relative to levels observed 2008-2013 (see Figure 5 c). Peak periphyton biomass at sites along the east shore (Sand Pt., Deadman Pt., Zephyr Pt.), north shore (Incline West), and Sugar Pine Pt. along the west shore, all were relatively low and similar to maximum levels observed in 2017 and much lower than levels observed in 2016.

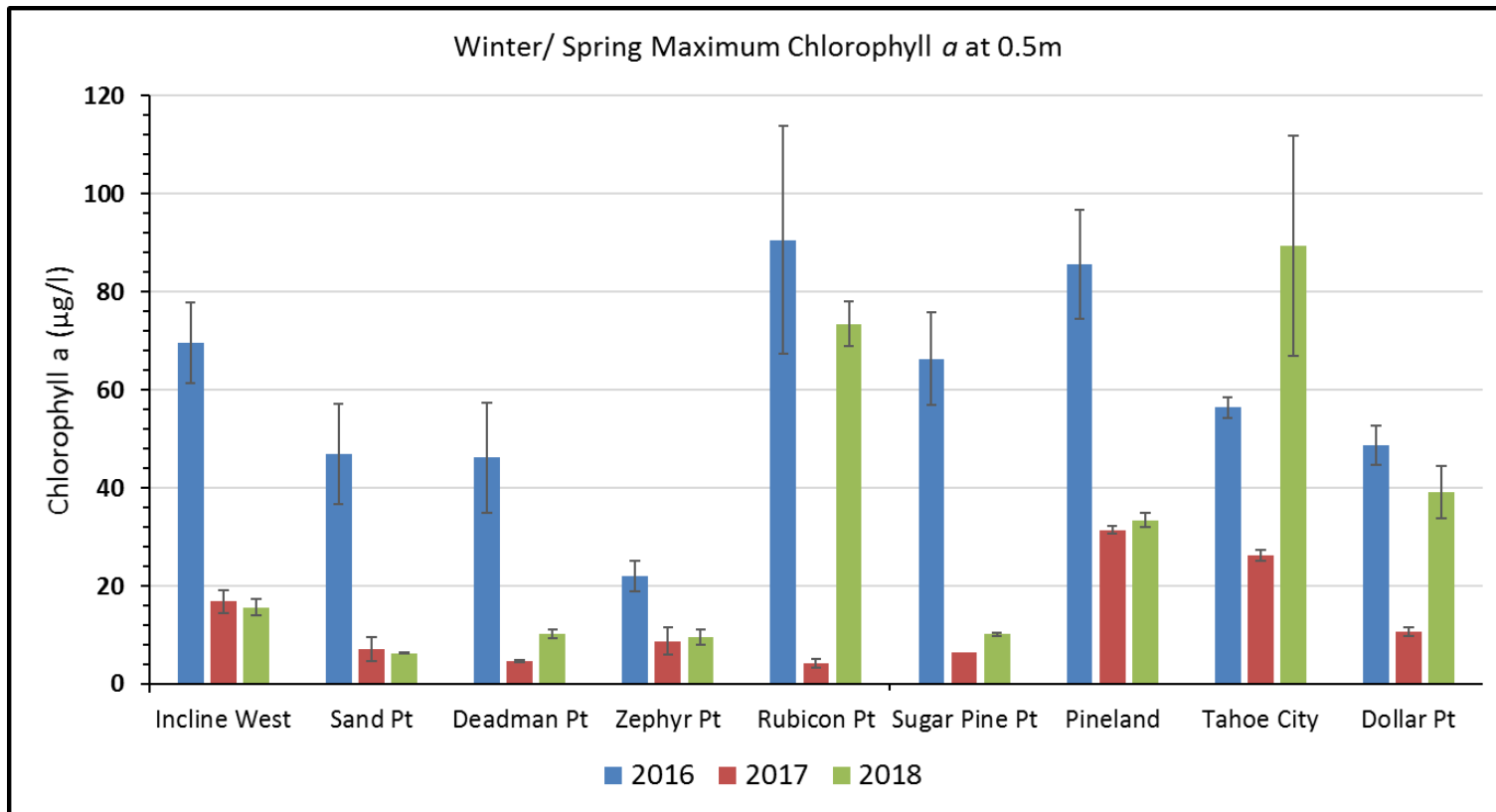


Figure 8. Maximum winter – spring (Jan.- July) periphyton chlorophyll *a* for Water Years 2016-2018 at the nine routine periphyton monitoring sites at 0.5m.

Results of Spring Synoptic Monitoring 2018

An additional 46 sites (Table 10) 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. We included measurements of PBI at 1 or 1.5 meters in addition to 0.5m at many of the sites to allow comparison with 2017 in which the rapidly rising lake level resulted relatively light biomass at 0.5m at many sites with heavier biomass deeper at 1 or 1.5m. The data collected in the spring synoptic monitoring are summarized in Table 11.

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 9 presents the relationship between the site *mean* chlorophyll *a* and PBI respectively. The relationship for site mean 0.5m chlorophyll *a* and PBI was relatively strong ($R^2 = 0.90$). The PBI relies on rapidly measured physical features of the overall periphyton mat (algal length and percent algal coverage in cm, the product of the two multiplied is the 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.

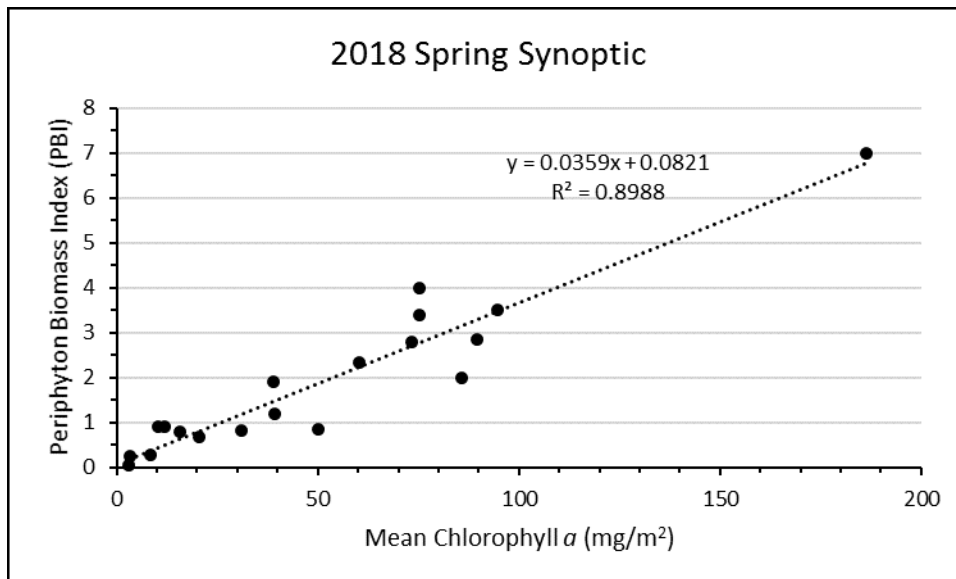


Figure 9. Relation between periphyton site mean chlorophyll *a* and Periphyton Biomass Index for sites where both were measured during the 2018 spring synoptic survey.

Table 10. 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 Offshore	N39 13.263; W119 55.832
	Hidden Beach Nearshore	
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 11. 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 25, 2018-May 15, 2018. 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; D= diatom mix “-f” indicates algae type best estimate based on field observation; “-m” indicates predominant algae types checked under microscope.

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	4/27/18	0.5	6227.03	50.11	1.96	29.93	4.52	3	3	1.2	70%	0.84	SD,FG -m
A	Cascade Creek	4/27/18	1.5		NA	NA	NA	NA	2.5	2.5	1.0	50%	0.50	SD-f
B	S. of Eagle Point	4/25/18	0.5		NA	NA	NA	NA	2.5	3	0.4	90%	0.36	FG,SD-f
B	S. of Eagle Point	4/25/18	1.5		NA	NA	NA	NA	NA	NA	0.4	80%	0.32	FG,SD-f
C	E.Bay/Rubicon	4/25/18	0.5		NA	NA	NA	NA	4	4	3.0	100%	3.00	SD-f
C	E.Bay/Rubicon	4/25/18	1.5		NA	NA	NA	NA	NA	NA	1.0	80%	0.80	FG-f
	Rubicon Pt.	4/25/18	0.5	6227.01	73.41	7.89 (n=3)	27.65	2.72 (n=3)	4	4	2.8	100%	2.80	SD-m
	Rubicon Pt.	4/25/18	1.5	6223.73	NA	NA	NA	NA	NA	NA	1.5	80%	1.20	FG,CY-f
D	Gold Coast	4/25/18	0.5		85.77	45.24 (n=3)	35.14	15.84 (n=3)	4	4	2.0	100%	2.00	SD-m
D	Gold Coast	4/25/18	1.5		NA	NA	NA	NA	NA	NA	2.0	80%	1.60	SD,FG-f
E	S. Meeks Point	4/25/18	0.5		NA	NA	NA	NA	3	3	2.5	100%	2.50	SD,FG-f
E	S. Meeks Point	4/25/18	1.5		NA	NA	NA	NA	NA	NA	1.0	80%	0.80	SD-f
F	N. Meeks Bay	4/25/18	0.5		NA	NA	NA	NA	3	3	1.5	80%	1.20	SD,FG-f
F	N. Meeks Bay	4/25/18	1.5		NA	NA	NA	NA	NA	NA	1.5	80%	1.20	FG-f
	Sugar Pine Pt.	4/25/18	0.5	6227.01	10.15	0.46	5.38	0.28	2	2	1.0	90%	0.90	SD-m
	Sugar Pine Pt.	4/25/18	1.5	6223.73	NA	NA	NA	NA	NA	NA	1.0	80%	0.80	FG,SD-f
G	Tahoma	4/25/18	0.5		NA	NA	NA	NA	NA	2	1.5	90%	1.35	SD,FG-f
G	Tahoma	4/25/18	1.5		NA	NA	NA	NA	NA	NA	1.5	50%	0.75	SD,FG-f
H	S. Fleur Du Lac	4/25/18	0.5		186.44	96.48 (n=3)	75.54	26.80 (n=3)	4	5	7.0	100%	7.00	SD-m
H	S. Fleur Du Lac	4/25/18	1.5		NA	NA	NA	NA	NA	NA	3.0	100%	3.00	SD,FG-f
I	Blackwood Creek	4/25/18	0.5		NA	NA	NA	NA	NA	3	2.0	100%	2.00	SD-f
I	Blackwood Creek	4/25/18	0.75		NA	NA	NA	NA	NA	NA	3.5	100%	3.50	
	Kaspian Pt.	4/26/18	0.5		NA	NA	NA	NA	4	4	2.5	100%	2.50	SD-f
	Kaspian Pt.	4/26/18	1.5		NA	NA	NA	NA	NA	NA	2.0	90%	1.80	FG,SD-f
J	Ward Creek	4/26/18	0.5		94.69	29.31 (n=3)	55.22	26.45 (n=3)	5	5	3.5	100%	3.5	SD-m
J	Ward Creek	4/26/18	1.5		NA	NA	NA	NA	NA	NA	1.0-6.0	50%	0.50+	SD-f

<u>Site</u>	<u>Site Name</u>	<u>Date</u>	<u>Samp.</u> <u>Depth</u> <u>(m)</u>	<u>Samp.</u> <u>Elev.</u> <u>(ft)</u>	<u>Chl a</u> <u>(mg/m²)</u>	<u>Std Dev</u> <u>(mg/m²)</u>	<u>AFDW</u> <u>(g/m²)</u>	<u>Std Dev</u> <u>(mg/m²)</u>	<u>Above</u> <u>Visual</u> <u>Score</u>	<u>Below</u> <u>Visual</u> <u>Score</u>	<u>Fil.</u> <u>Length</u> <u>(cm)</u>	<u>Algal</u> <u>Cover.</u> <u>%</u>	<u>Biomass</u> <u>Index</u>	<u>Algal</u> <u>Type</u>
	Pineland	4/26/18	0.5	6227.02	20.55	5.45 (n=3)	20.40	5.67 (n=3)	3.5	3.5	1.0	69%	0.69	SD,CY,FG-m
	Pineland- Rock A	4/26/18	0.8	6226.04	NA	NA	NA	NA	NA	NA	2.5	100%	2.50	
	Pineland	4/26/18	1.0	6225.38	NA	NA	NA	NA	NA	NA	3.5	100%	3.50	SD,FG-f
	Pineland	4/26/18	1.5	6223.74	NA	NA	NA	NA	NA	NA	2.5	65%	1.63	SD,FG-f
K	N. Sunnyside	4/26/18	0.5		NA	NA	NA	NA	NA	3	0.5	33%	0.17	SD-f
L	Tavern Pt.	4/26/18	0.5		NA	NA	NA	NA	2.5	2.5	1.0	NA	NA	SD-f
L	Tavern Pt.	4/26/18	1.5		NA	NA	NA	NA	NA	NA	2.0	70%	1.40	SD,FG-f
	Tahoe City	4/26/18	0.5	6227.02	89.48	38.90 (n=3)	61.63	22.12 (n=3)	4	4	3.0	95%	2.85	SD-m
	Tahoe City	4/26/18	1.5	6223.74	NA	NA	NA	NA	NA	NA	2.0	40%	0.80	SD-f
TCT	Tahoe City Trib.	4/27/18	0.5		75.12	37.71 (n=3)	73.13	28.75 (n=3)	5	5	4.0	100%	4.00	SD-m
TCT	Tahoe City Trib.	4/27/18	1.5		NA	NA	NA	NA	NA	NA	5.08	100%	5.08	SD-f
M	TCPUD Boat Ramp	5/11/18	0.5		NA	NA	NA	NA	4	4	2.5	90%	2.25	SD-f
	Lake Forest	5/11/18	0.5		60.13	43.37 (n=3)	46.91	15.32 (n=3)	NA	4	2.5	94%	2.35	SD,D,FG,CYm
N	S. Dollar Pt.	4/26/18	0.5		NA	NA	NA	NA	NA	2	1.0	80%	0.80	SD-f
N	S. Dollar Pt.	4/26/18	0.75-1.5		NA	NA	NA	NA	NA	NA	2.0	100%	2.0	SD-f
	Dollar Pt.	4/26/18	0.5	6227.02	39.14	9.40 (n=3)	24.45	5.04 (n=3)	2	3	1.5	80%	1.20	SD,D-m
O	S. Dollar Creek	4/26/18	0.5		NA	NA	NA	NA	NA	4	4.0	100%	4.0	SD-f
O	S. Dollar Creek	4/26/18	0.75		NA	NA	NA	NA	NA	NA	7.0	100%	7.0	SD-f
O	S. Dollar Creek	4/26/18	1.5		NA	NA	NA	NA	NA	NA	7.0	100%	7.0	SD-f
P	Cedar Flat	4/26/18	0.5		NA	NA	NA	NA	3	3	2	90%	1.8	SD-f
P	Cedar Flat	4/26/18	1.5		NA	NA	NA	NA	NA	NA	1.5	80%	1.2	SD-f
Q	Garwood's	5/9/18	0.5		75.29	10.83 (n=3)	88.28	14.80 (n=3)	4.5	4.5	4.0	85%	3.4	SD,D-m
Q	Garwood's	5/9/18	1.5		NA	NA	NA	NA	NA	NA	6.4	50%	3.2	SD-f
R	Flick Point	5/9/18	0.5		NA	NA	NA	NA	3	3.5	1.5	60%	0.90	SD-f
S	Stag Avenue	5/9/18	0.5		NA	NA	NA	NA	3	3	1.0	80%	0.80	SD-f
S	Stag Avenue	5/9/18	1.5		NA	NA	NA	NA	NA	NA	1.5	50%	0.75	SD,FG-f
T	Agatam Boat R.	5/9/18	0.5		30.84	7.32	21.19	1.83	3	3	0.9	90%	0.81	SD,CY-m
T	Agatam Boat R.	5/9/18	1.5		NA	NA	NA	NA	NA	NA	2.0	25%	0.50	SD-f
E17	Kings Beach	5/9/18	0.5		NA	NA	NA	NA	2	3	1.5	40%	0.60	SD-f
E17	Kings Beach	5/9/18	1.5		NA	NA	NA	NA	NA	NA	2.0	20%	0.40	SD-f

Site	Site Name	Date	<u>Samp.</u> <u>Depth</u> (m)	<u>Samp.</u> <u>Elev.</u> (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
E16	Brockway Springs	5/9/18	0.5		NA	NA	NA	NA	NA	NA	0.1/1.0	80%/50%	0.53	SD,CY-m
E16	Brockway Springs	5/9/18	1.5		NA	NA	NA	NA	NA	NA	1.5	25%	0.38	SD-f
E15	No. Stateline Point	5/10/18	0.5		NA	NA	NA	NA	3	3	0.5	90%	0.45	SD-f
E15	No. Stateline Point	5/10/18	1.5		NA	NA	NA	NA	NA	NA	2.0	50%	1.00	SD-f
E14	Stillwater Cove	5/10/18	0.5		NA	NA	NA	NA	2	2	1.0	60%	0.60	SD-f
	Old Incline West	5/10/18	0.5		NA	NA	NA	NA	2	3	1.5	50%	0.75	SD-f
	Incline West	5/10/18	0.5	6227.11	15.69	2.41	12.50	1.38	2	3	1.0	80%	0.80	SD,CY-m
	Incline Condo	5/10/18	0.5		NA	NA	NA	NA	3	3	1.1	90%	0.99	SD-f
E13	Burnt Cedar	5/10/18	0.5		11.75	0.30	9.51	1.10	3	3	1.0	90%	0.90	SD,CY-m
	Hidden Beach Insh.	5/10/18	0.5		NA	NA	NA	NA	1	2	0.5	50%	0.25	SD-f
	Hidden Beach Offsh	5/10/18	0.5		NA	NA	NA	NA	NA	2	0.3	70%	0.21	SD-f
	Observation Pt.	5/10/18	0.5		NA	NA	NA	NA	2	2	0.5	50%	0.25	SD-f
	Observation Pt.	5/10/18	1.5		NA	NA	NA	NA	NA	NA	1.0	80%	0.80	FG,SD-f
	Sand Pt.	5/10/18	0.5	6227.10	3.36	0.93	5.45	4.34	2	2.5	0.3	80%	0.24	SD,CY-m
	Sand Pt.	5/10/18	1.5	6223.82	NA	NA	NA	NA	NA	NA	1.0	50%	0.50	FG,SD-f
E10	Chimney Beach	5/10/18	0.5		NA	NA	NA	NA	2	2.5	0.5	90%	0.45	SD-f
E10	Chimney Beach	5/10/18	1.5		NA	NA	NA	NA	NA	NA	2.0	70%	1.40	FG,SD-f
E9	Skunk Harbor	5/10/18	0.5		NA	NA	NA	NA	2	2	0.3	50%	0.15	SD,CY-f
E9	Skunk Harbor	5/10/18	1.5		NA	NA	NA	NA	NA	NA	≤1.0	50%	≤0.50	SD,FG-f
	Deadman Pt.	5/10/18	0.5	6227.10	2.98	0.76	NES	NES	1.5	2	0.1	50%	0.05	SD,CY-m
E8	So. Deadman Point	5/10/18	0.5		NA	NA	NA	NA	NA	3	0.5	90%	0.45	SD-f
E8	So. Deadman Point	5/10/18	1.5		NA	NA	NA	NA	NA	NA	2.0	60%	1.2	SD,FG-f
E7	So. Glenbrook Bay	5/10/18	0.5		NA	NA	NA	NA	3	3	0.4	90%	0.36	SD-f
E6	Cave Rock Ramp	5/10/18	0.5		38.84	8.78 (n=3)	28.62	7.44 (n=3)	4	4	2.0	95%	1.9	SD,CY-m
E5	Lincoln Park	5/15/18	0.5		NA	NA	NA	NA	2	3	0.2	50%	0.1	SD-f
E4	No. Zephyr Cove	5/15/18	0.5		NA	NA	NA	NA	2	3	0.8	70%	0.56	SD,FG-f
	Zephyr Pt.	5/15/18	0.5	6227.16	8.24	0.50	8.24	0.73	2	2	0.3	90%	0.27	CY,SD,FG-m
	So. Zephyr Pt.	5/15/18	0.5		NA	NA	NA	NA	2	4	2.5	90%	2.25	SD-f
E2	No. Elk Pt.	5/15/18	0.5		NA	NA	NA	NA	2	3	0.5	70%	0.35	SD-f
E1	So. Elk Point	5/15/18	0.5		NA	NA	NA	NA	2	5	3.0	90%	2.70	SD-f
	Timber Cove Rock	4/25/18	1.5		NA	NA	NA	NA	NA	3.5	1.0	70%	0.70	SD-f
S1	T. Keys Entrance	4/25/18	0.5		NA	NA	NA	NA	3	4	3.0/1.0	20%/40%	1.0	FG,SD-f
	Kiva Pt.	4/25/18	0.5		NA	NA	NA	NA	2	2	0.3	10%	0.5	SD-f
	Kiva Pt.	4/25/18	1.5		NA	NA	NA	NA	NA	NA	1.5	30%	0.45	SD-f

Synoptic Distribution of PBI

The PBI values were used to prepare a map of synoptic distribution of periphyton for spring 2018 at the 0.5m sampling depth (Fig 10). Spring synoptic sampling was carried out from 4/25/18 to 5/15/18. Generally light PBI (indicated by the two shades of green, in Figure 10) was observed at 0.5m along much of the east shore and at a couple of sites along the southwest shore. Heavy PBI (indicated by red) or moderate-heavy PBI (indicated by orange) was measured along much of the west shore and at several locations along the south east shore. The areas with the highest PBI included: South Fleur du lac (PBI = 7.0), Tahoe City Tributary (PBI = 4.0), So. Dollar Cr. (PBI =4.0), Ward Cr. (PBI = 3.5), Garwoods (PBI = 3.4) and Emerald Bay/ Rubicon (PBI = 3.0). Moderate PBI (indicated by yellow) was observed in areas along the north and south shores and along portions of the west and east shore.

The amount of periphyton as represented by PBI was much heavier in 2018 at 0.5m compared to 2017 (Figure 11 a,b). During the WY 2017 the lake level rose substantially (over 6 feet) due to precipitation from many large atmospheric river storms. The rising lake resulted in relatively short periods of time for periphyton to accumulate on rocks at 0.5m (which were relatively recently submerged) in spring 2017 which contributed to the low PBI seen at most sites at 0.5m in spring 2017. In 2018, the lake level was sustained at high levels and substrate at 0.5m was continually submerged for over a year, allowing a long period for the periphyton community to develop. This may have contributed to higher biomasses around the lake at 0.5m in 2018.

The pattern noted above of heavier PBI along the west shore compared to the east shore in 2018 may be the result of several contributing factors. The west shore typically receives more precipitation and contributes more surface and subsurface inputs of water with associated nutrients, to fuel periphyton growth than the east shore. Impacts of local sources of nutrients from developed areas, storm water runoff, lake mixing, upwelling, currents and degree of exposure to wave activity and potential sloughing of algae are some of the other factors which may contribute to higher PBI along the west shore.

Observations of PBI were also made at 1.5m at many of the sites around the lake in 2018. Figure 12 below shows a comparison of PBI levels at 0.5m (green bars) and 1.5m (white and red bars). The white 1.5m bars indicate PBI near or less than 0.5m PBI. The red bars indicate 1.5m PBI is greater than 0.5m PBI. PBI at 0.5m in 2018 was near to or higher than PBI at 1.5m at many sites. At 20 of 31 sites the 0.5m PBI was either higher than or similar to the PBI level at 1.5 m. At 11 of 31 sites the level of PBI at 1.5m was greater than at 0.5m. This was different that the general pattern in 2017, when PBI was generally lighter at 0.5m than at 1 or 1.5m at many sites.

Distribution of Periphyton Biomass at 0.5 m Depth, Spring 2018

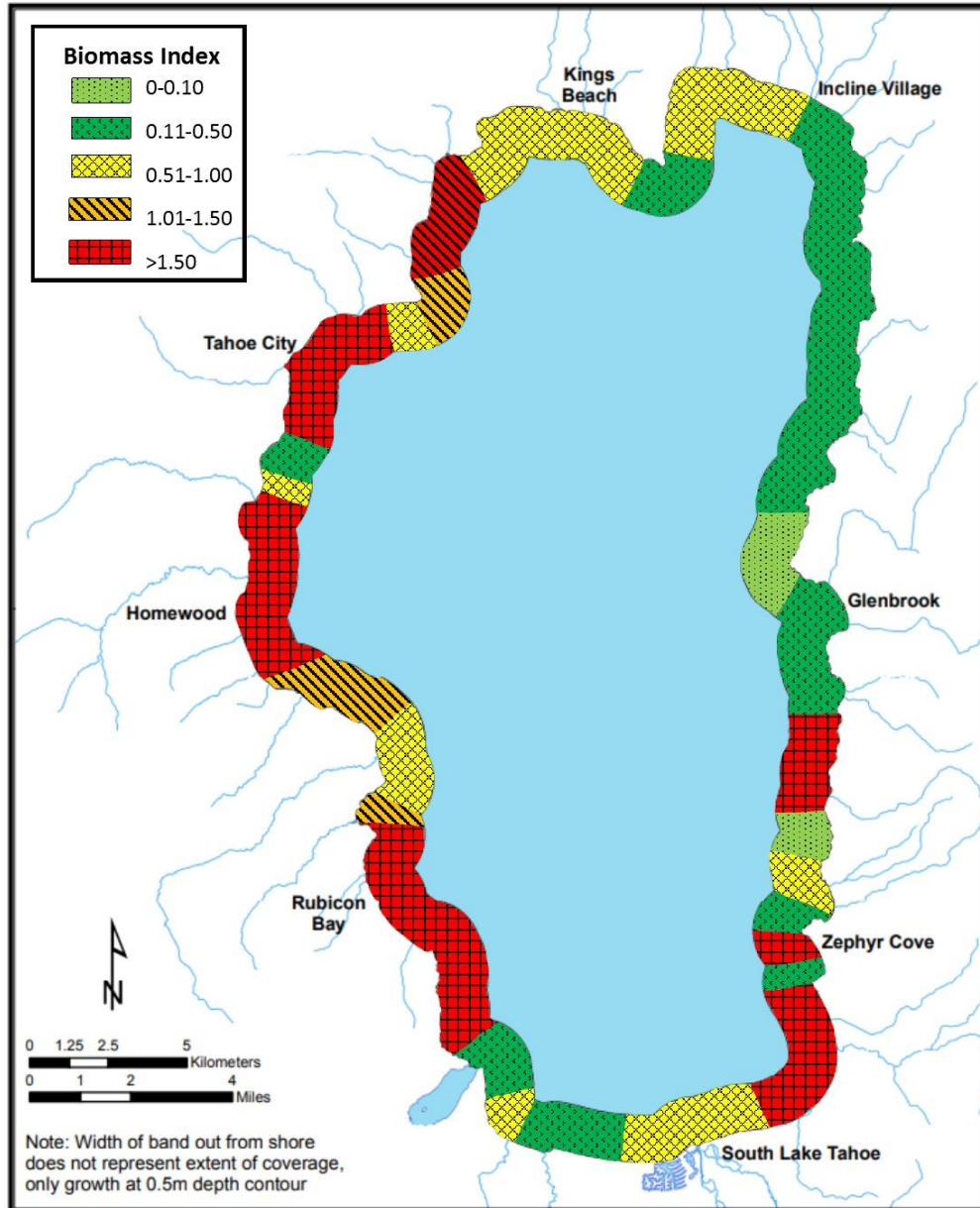


Figure 10. Distribution of peak periphyton biomass measured during the spring synoptic 2018 (4/25/18-5/15/18) at 0.5m. Shading indicates levels of biomass measured using a rapid assessment method: Periphyton Biomass Index (PBI). (PBI= Avg. Filament Length x (multiplied by) Percent Area Covered with Algae).

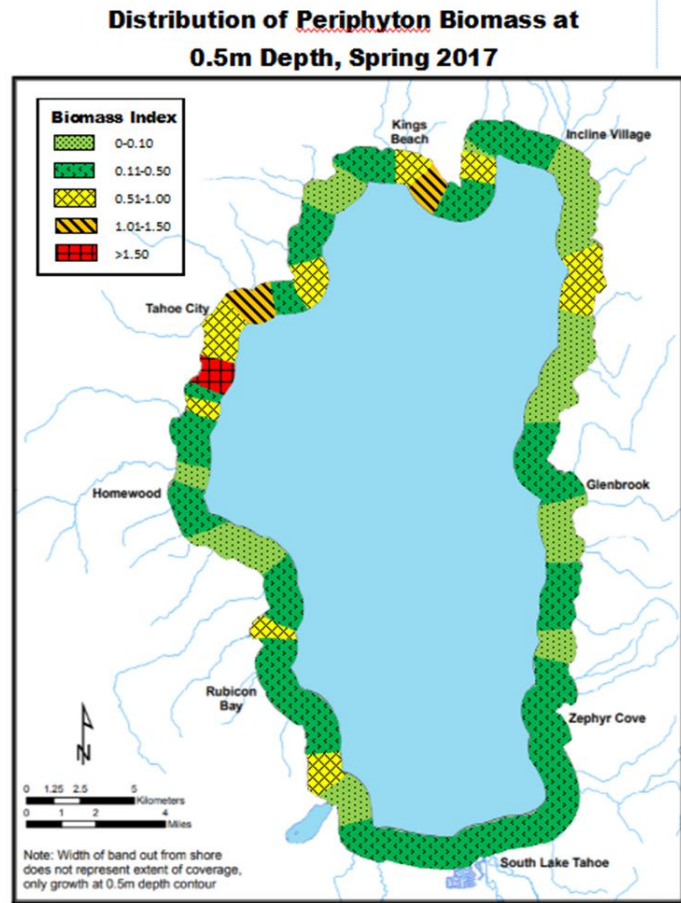


Fig. 11.a. Spring 2017 PBI

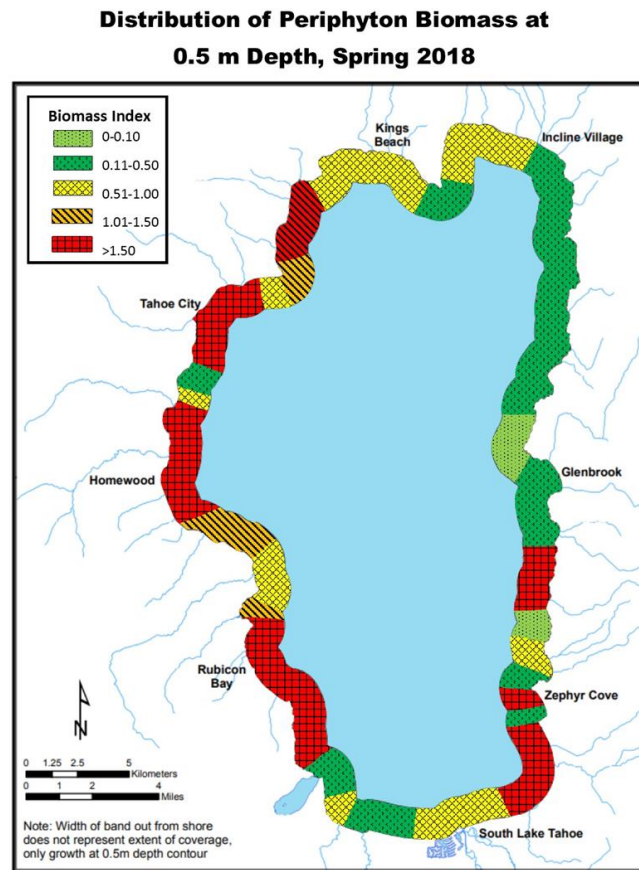


Fig. 11.b. Spring 2018 PBI.

Figures 11a,b. Comparison of periphyton biomass index (PBI) levels at 0.5m during spring synoptics in 2017 and 2018. PBI levels were much higher at 0.5m in 2018. A sustained high lake level, and longer period for the periphyton community to develop on rock substrate at 0.5m likely contributed to the higher PBI levels in 2018.

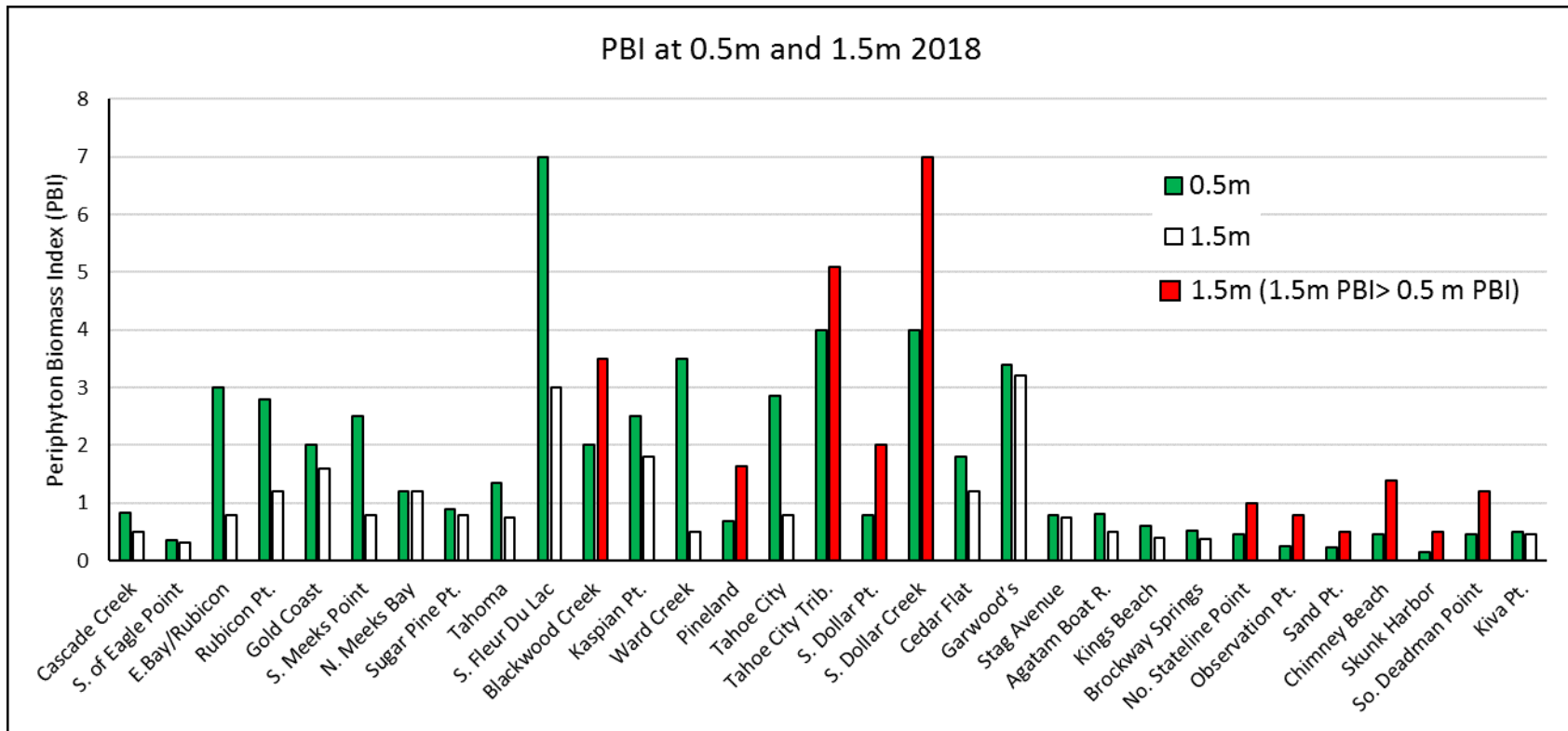


Figure 12. Comparison of PBI at 0.5m and 1.5m at sites for which PBI was measured at both depths in spring synoptic 2018. Green shading indicates 0.5m PBI. 1.5m PBI is indicated either by white or red shading. The white 1.5m bars indicate PBI near or less than the 0.5m PBI. The red bars indicate 1.5m PBI is greater than 0.5m PBI. PBI at 0.5m was near to or higher than PBI at 1.5m at many sites in 2018. This was different that the general pattern in 2017, when PBI was generally lighter at 0.5m than at 1 or 1.5m at many sites. (Sites left to right represent clockwise progression around the lake).

Heavy Periphyton Growth at South Fleur du Lac in Spring 2018

One interesting observation from this year's sampling relates to the level of growth at the South Fleur du lac site. That site had unusually heavy growth. The algae there had a unique growth pattern, producing long stringy filaments in addition to the furry coating over the rocks, some of the strands were over 5 inches long (Figure 13). A long-time resident from the area indicated the level of growth there was the heaviest he's seen it going back to 1990. Examination of the stringy filaments under the microscope indicated the strands to have much mucilaginous material in the middle, with very small stalked diatoms on the outer edges of filaments (Figure 14) and with portions of filament also having larger stalked diatoms further out on the strand (Figure 15). The cause of the heavy growth this year there is not known. There is a large stormwater outfall pipe adjacent to the site and it is also south of Blackwood Cr. However, it is unknown if water inputs from these sources had substantial impacts on the levels of growth seen there in 2018.



Figure 13. Heavy growth of periphyton at South Fleur du lac site 4/25/18. Photo by Katie Senft.

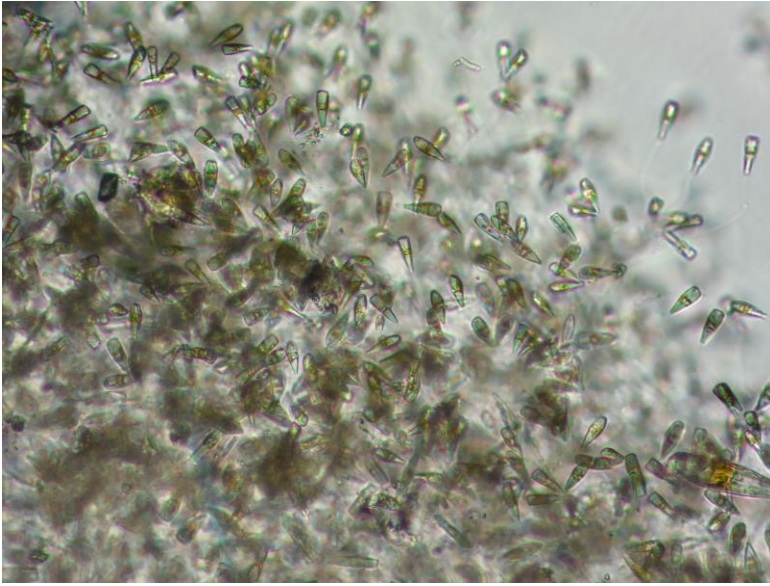


Figure 14. Microscope image of outer edge of one of the strands of periphyton from So. Fleur du lac showing many small stalked diatoms on edge along with much mucilage material in strand.

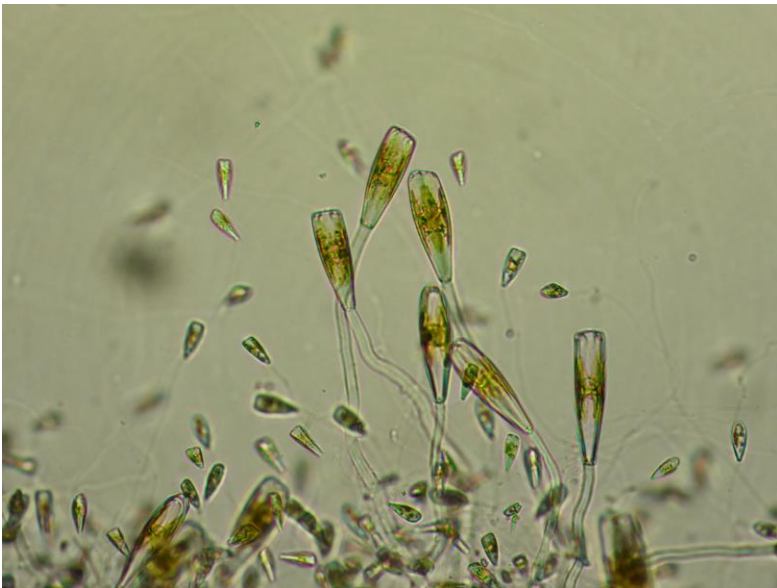


Figure 15. Large and small stalked diatoms, at edge of periphyton strand, South Fleur du lac.

Predominant Algal Types during 2018 Spring Synoptic

The predominant algal types in the periphyton observed around the lake at 0.5m during the spring synoptic 2018 were primarily large and/or small stalked diatoms. Cyanobacteria and/or filamentous green algae was also present at multiple sites.

Observations of Motile Diatoms in Tahoe Periphyton

In observations of live periphyton material under the microscope during 2018 multiple observations were made of motile diatoms. These diatoms included *Gomphoneis* which often is the prevalent diatom in Tahoe periphyton and *Cymbella* genera (both which can form stalks). These diatoms possess a raphe which is involved in diatom motility and adhesion. In some samples, some of the individual cells (free of stalks) were observed to be moving among the mass of periphyton material (Figure 16). Video of motile diatoms was also collected on several dates from several sites. The ability to move, adhere and produce stalk material to attach and rise above other algae on substrate provide potential mechanisms for exploiting their habitat. The stalked forms of *Gomphoneis* along with other stalked diatoms are responsible for the thick furry growths of periphyton observed in the spring in many areas.

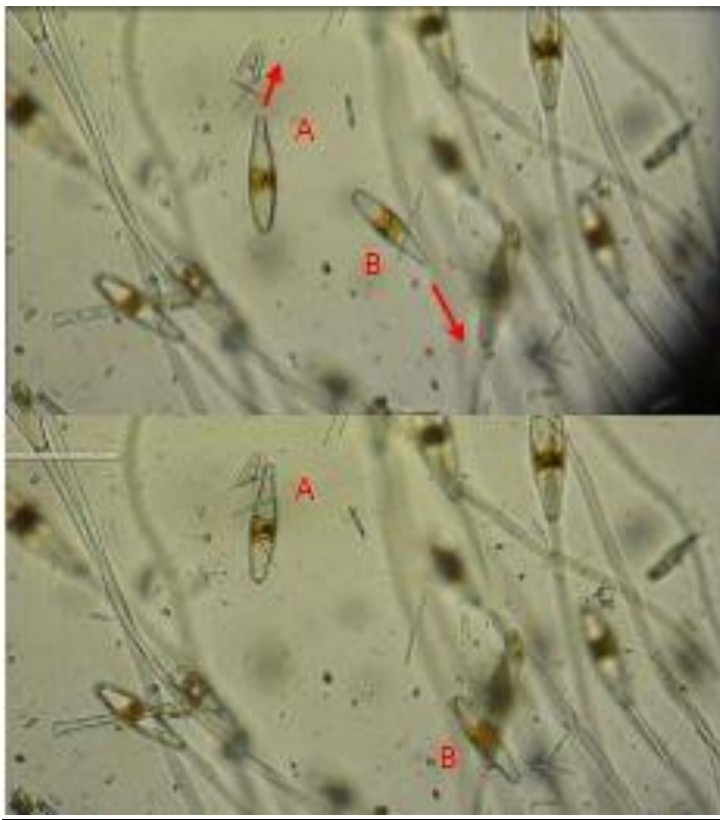


Figure 16. Two images (bottom image is later image) captured from video of two diatoms (*Gomphoneis*) (“A” and “B” in center of top photo) moving in different directions (red arrows) among stalked forms of *Gomphoneis*, sample collected from Lake Forest 5/11/18.

Section IV. Nearshore Network Station Additions

Two stations were added to the nearshore water quality monitoring network in November 2017. The new station at Timber Cove is located off of the end of the long pier running from the “Boathouse on the Pier” restaurant. The new station at Camp Richardson is located off of the pier extending from the Camp Richardson marina. Both stations were damaged due to lightning strikes in May 2018 but have since been repaired and re-installed.

Together with the existing set of eight Lake Tahoe nearshore stations, these new stations are generating a high-frequency, spatially distributed data set that allows us to quantify temperature, conductivity, wave height, chlorophyll-*a* fluorescence, dissolved organic matter fluorescence, turbidity, and dissolved oxygen patterns at the perimeter of Lake Tahoe.

Figure 17 provides some examples of data collected in spring 2018 at the Timber Cove site. The plots show Specific Conductance (SpC), Colored Dissolved Organic Matter (CDOM) and lake temperature during March 1 to May 15, 2018. This was a period in which a couple of significant storm events occurred (March 21-22, 2018 and April 6-7 2018) along with periods of spring snowmelt which caused increased flows in the Upper Truckee River (see Figure 18). Inflow from the Upper Truckee can impact this site as well as potentially Bijou Cr. and stormwater inputs. There are periods of decreased conductivity at Timber Cove and increased CDOM during and following the large storm events. The decreased conductivities likely reflect inflow water, which is often lower in conductivity than the lake and results in “dips” in conductivity relative to typical lake conductivity. Stream water is higher in organics than the lake and results in spikes in CDOM when inflow water is present at the site. The data shown give an idea of how dynamic the plumes of inflow water are, as single point measurements show the signal appearing and disappearing over periods of hours.

Figure 19 provides an example of wave height, turbidity and temperature data collected from four nearshore stations, along northwest (Tahoe Vista), southwest (Rubicon), south (Timber Cove) and east (Glenbrook) shores during May 8-14, 2018. This period included an east wind event on May 11-12. Wave heights were highest at the Rubicon and Timber Cove sites during the east wind event. Turbidity tends to spike in response to increased wave activity along the shore (Roberts et al., 2019). There was a dip in temperature at Glenbrook due to mild upwelling on the east shore in response to the east wind. There also appears to be a slight rise in temperature at Rubicon during the same east wind event period. (The higher baseline turbidity at Tahoe Vista and Glenbrook is due to biofouling and should not be considered representative of baseline conditions in those areas).

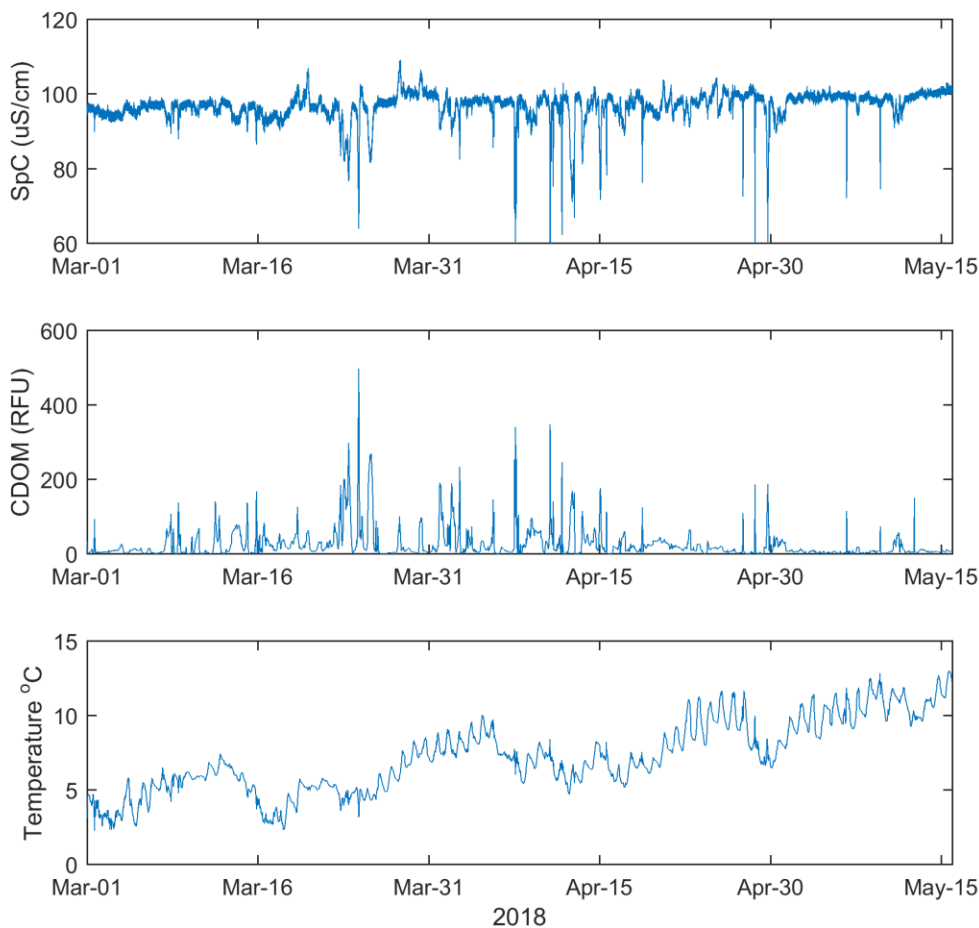


Figure 17. Comparisons of Specific Conductance (SpC), Colored Dissolved Organic Matter (CDOM), and Temperature at TERC’s Timber Cove nearshore station Mar. 1 to May 15, 2018.

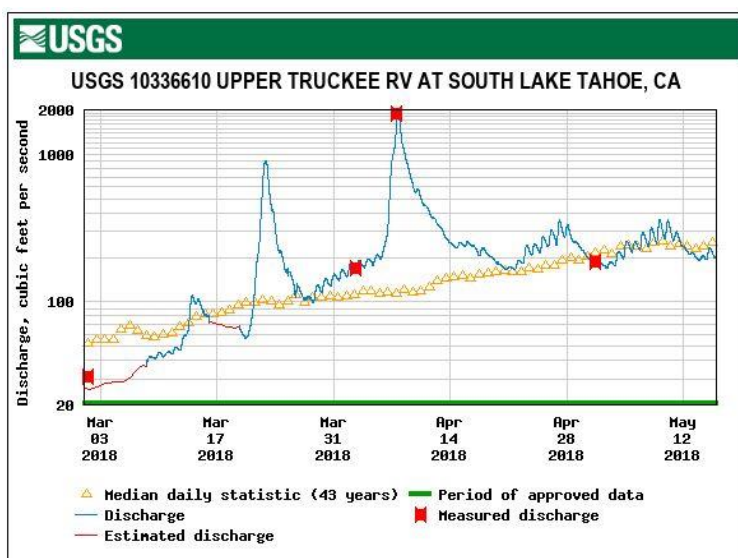


Figure 18. Upper Truckee River discharge March 1 to May 15, 2018. From: <https://nwis.waterdata.usgs.gov/nv/nwis/rt>

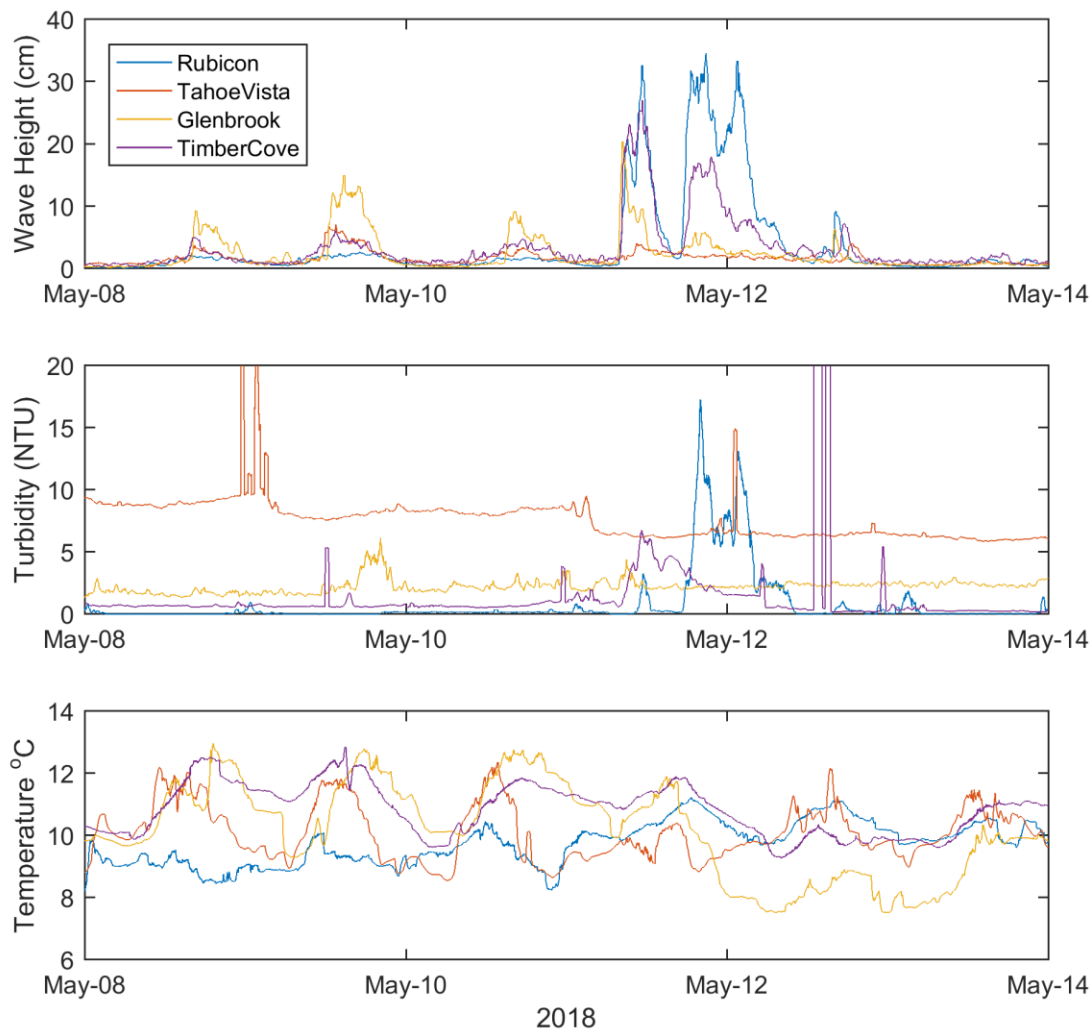


Figure 19. Examples of wave height, turbidity and temperature data collected from TERC’s nearshore stations along northwest (Tahoe Vista), southwest (Rubicon), south (Timber Cove) and east (Glenbrook) shores during May 8-14, 2018 which included an east wind event on May 11-12. Turbidity tends to spike in response to waves. Wave heights were highest at the Rubicon and Timber Cove sites during the east wind event. (Note the higher baseline turbidity at Tahoe Vista and Glenbrook is due to biofouling and should not be considered representative of baseline conditions in those areas.)

Section V. 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. 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 (1) algal growth potential assays; (2) phytoplankton enumeration; (3) periphyton analyses project tasks.

Algal Growth Potential Bioassays QA/QC

(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.d. provide the means and standard deviations for extracted chlorophyll *a* measurements and in vivo fluorescence measurements in the AGP experiments. Treatment replication was good using duplicate treatments. The standard deviations were low relative to treatment means for a majority of the replicates. All replicate pairs were used.

Phytoplankton Enumeration QA/QC

Quality assurance for phytoplankton enumeration focuses on careful preparation and settling of known volumes of representative sub-samples in sedimentation chambers. Settling procedures follow Utermöhl’s technique and counts were made under a Zeiss Observer A1 inverted microscope. The reliability of the analysis depends upon the random distribution of algal units/cells within the sedimentation chambers. The observed taxa are identified and the number of algal units for each taxon were recorded. Larger taxa settled in 1 cm² areas of view were first counted at low. Then smaller species were counted at high magnification along 1 cm long strips or random fields. The data from all counted area, strips and fields are combined in computation of totals for the sample.

Periphyton QA/QC

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 5 routine site samples and 7 spring synoptic site samples. Variability in 6 sample sets of triplicates was particularly high. Coefficients of variation (Std. Dev. / Mean) were calculated and were over 30% for these samples, i.e.: Ward Cr. (c.v.= 31%); Tahoe City Tributary (c.v.=38%); Tahoe City 4/26/18 (c.v. = 43%); Gold Coast 4/25/18 (c.v.=45%); South Fleur du lac 4/25/18 (c.v.=52%) and Lake Forest 5/11/18 (c.v.=72%). These samples had thick growth of stalked diatoms, which are difficult to sample with good replication. The biomass estimates based on all triplicates were used however, the high variability should be noted. For future sampling of thick growths it would be desirable to increase the number of replicates to 4 when possible to obtain better estimates of mean growth.

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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 9/12/17. 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 #17 H₂O Collection 9/12/17	Date Collected	Time Collected	Lake Surface T (°C)	Collection Depth (m)	Lake Chl. <i>a</i> (µg/l)	Observations	Extracted Chlor. <i>a</i> AGP D6 9/18/17	Final AGP Results Chl. <i>a</i> ± s.d. (µg/l)	
<u>Nearshore:</u>									
Sunnyside	9/12/17	12:25	20.5	1	.36±.04	Poor Clarity	.25 ± .02	.36 ± .04	
Tahoe City	9/12/17	7:55	19.5	1	.58±.04		.48 ± .05	.58 ± .04	
Kings Beach	9/12/17	8:47	19.5	1	.30±.02		.29 ± .02	.32 ± .01	
Crystal Bay	9/12/17	9:10	20.0	1	.31±.02		.26 ± .04	.33 ± .01	
Glenbrook	9/12/17	9:45	19.0	1	.30±.01		.25 ± .01	.30 ± .01	
Zephyr	9/12/17	10:04	19.0	1	.28±.02		.24 ± .04	.34 ± .01	
Timber Cove	9/12/17	10:33	19.0	1	.28±.04	.39 ± .03	.39 ± .01		
Tahoe Keys	9/12/17	10:52	19.5	1	.56±.03	Fair/Poor Clarity	.74 ± .04	.74 ± .04	
Camp Rich.	9/12/17	11:05	NA	1	.33±.01		.29 ± .02	.34 ± .01	
Emerald Bay	9/12/17	11:28	20.0	1	.34±.06		.47 ± .01	.47 ± .01	
Rubicon Bay	9/12/17	12:00	20.5	1	.24±.01		.22 ± .03	.28 ± .01	
<u>Mid-Lake:</u>									
Mid-lk No.	9/12/17	8:20	19.0	1	.29±.04		.21 ± .03	.29 ± .04	
Mid-lk So.	9/12/17	10:20	19.5	1	.32±.00		.25 ± .01	.32 ± 0	
Experiment Daily Fluor.	Backgrd. Fluor. GF/F Fil.	D0 Fluor. 9/12/17 17:00	D1 Fluor. 9/13/17 14:25	D2 Fluor. 9/14/17 14:25	D4 Fluor. 9/16/17 12:35	D6 Fluor. 9/18/17 13:50	D8 Fluor. 9/20/17 14:00	D10 Fluor. 9/22/17 14:15	D13 Fluor. 9/25/17 14:35
Sunnyside	.020	.239	.215±.017	.191±.004	.170±.001	.139±.006	.142±.006	.158±.003	.167±.011
Tahoe City	.059	.389	.384±.020	.392±.016	.304±.003	.297±.002	.287±.005	.282±.008	.255±.028
Kings Beach	.024	.213	.217±.004	.208±.007	.186±.008	.157±.001	.145±.003	.158±.011	.155±.004
Crystal Bay	.023	.205	.224±.005	.203±.005	.178±.015	.170±.004	.171±.011	.175±.021	.170±.004
Glenbrook	.004	.202	.196±.001	.172±.003	.149±.008	.120±.004	.141±.004	.158±.000	.177±.011
Zephyr	.024	.197	.230±.008	.227±.011	.201±.004	.136±.003	.143±.006	.159±.013	.168±.011
Timber Cove	.032	.203	.222±.006	.268±.004	.255±.008	.190±.013	.177±.003	.177±.011	.203±.006
Tahoe Keys	.054	.282	.264±.001	.243±.018	.225±.001	.226±.006	.293±.008	.324±.003	.273±.042
Camp Rich.	.025	.226	.230±.006	.225±.003	.201±.002	.141±.009	.154±.004	.180±.007	.177±.014
Emerald Bay	.058	.306	.251±.021	.208±.004	.204±.006	.251±.008	.293±.006	.261±.015	.265±.035
Rubicon Bay	.022	.191	.194±.005	.182±.001	.160±.001	.128±.008	.135±.004	.140±.003	.153±.000
<u>Mid-Lake:</u>									
Mid-lk No.	.023	.171	.189±.015	.175±.013	.152±.005	.117±.007	.109±.012	.132±.013	.166±.007
Mid-lk So.	.021	.214	.205±.006	.182±.003	.158±.001	.117±.005	.120±.001	.140±.006	.171±.004

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 12/8/17.

AGP #18 H₂O Collection 12/8/17	Date Collected	Time Collected	Lake Surface T (°C)	Collection Depth (m)	Lake Chl. <i>a</i> (µg/l)	Observations	Extracted Chlor. <i>a</i> AGP D6 12/14/17	Final AGP Results Chl. <i>a</i> ± s.d. (µg/l)	
<u>Nearshore:</u>									
Sunnyside	12/8/17	13:44	8.0	1	.67±.04		.52 ± .01	.67 ± .04	
Tahoe City	12/8/17	9:13	7.0	1	.61±.04		.54 ± .01	.61 ± .04	
Kings Beach	12/8/17	9:54	7.5	1	.75±.10		.50 ± .05	.75 ± .10	
Crystal Bay	12/8/17	10:15	8.0	1	.78±.08		.51 ± .01	.78 ± .08	
Glenbrook	12/8/17	10:50	8.0	1	.74±.03		.63 ± NA	.74 ± .03	
Zephyr	12/8/17	11:14	8.0	1	.72±.04		.50 ± .01	.72 ± .04	
Timber Cove	12/8/17	11:44	7.0	1	.60±.01		.53 ± .03	.60 ± .01	
Tahoe Keys	12/8/17	12:00	7.5	1	.56±.01		.54 ± .02	.56 ± .01	
Camp Rich.	12/8/17	12:15	8.0	1	.67±.02		.55 ± .04	.67 ± .02	
Emerald Bay	12/8/17	12:43	6.5	1	1.05±.01	Poor Clarity	.60 ± .01	1.05 ± .01	
Rubicon Bay	12/8/17	13:14	8.0	1	.73±.02		.45 ± .06	.73 ± .02	
<u>Mid-Lake:</u>									
Mid-lk No.	12/8/17	9:33	8.5	1	.83±.01		.53 ± .04	.83 ± .01	
Mid-lk So.	12/8/17	11:30	8.0	1	.83±.02		.53 ± .03	.83 ± .02	
Experiment Daily Fluor.	Backgrd. Fluor. GF/F Fil.	D0 Fluor. 12/8/17 16:15	D2 Fluor. 12/10/17 12:00	D4 Fluor. 12/12/17 18:05	D6 Fluor. 12/14/17	D8 Fluor. 12/16/17 13:45	D10 Fluor. 12/18/17 15:00	D12 Fluor. 12/20/17 13:25	D14 Fluor. 12/22/17 15:45
Sunnyside	.034	.379	.297±.010	.259±.006	.264±.004	.264±.007	.261±.007	.233±.008	.214±.011
Tahoe City	.027	.351	.278±.001	.249±.004	.256±.001	.259±.004	.242±.003	.222±.001	.189±.007
Kings Beach	.038	.346	.278±.001	.237±.008	.240±.001	.251±.004	.233±.004	.223±.006	.202±.002
Crystal Bay	.036	.364	.283±.002	.242±.004	.249±.004	.255±.007	.240±.006	.227±.001	.203±.010
Glenbrook	.034	.368	.302±.001	.292±.008	.306±.006	.312±.001	.284±.009	.259±.006	.224±.002
Zephyr	.028	.379	.292±.006	.254±.006	.260±.006	.260±.003	.254±.003	.227±.011	.202±.011
Timber Cove	.025	.336	.282±.002	.307±.009	.328±.019	.325±.006	.305±.015	.264±.006	.232±.002
Tahoe Keys	.036	.326	.285±.008	.293±.000	.318±.003	.320±.006	.301±.008	.274±.013	.210±.010
Camp Rich.	.037	.363	.297±.006	.293±.002	.295±.009	.293±.003	.290±.006	.265±.013	.236±.011
Emerald Bay	.110	.593	.469±.004	.434±.004	.438±.004	.404±.008	.371±.021	.343±.022	.292±.021
Rubicon Bay	.034	.399	.292±.002	.264±.004	.279±.001	.277±.004	.272±.011	.253±.017	.239±.015
<u>Mid-Lake:</u>									
Mid-lk No.	.027	.367	.283±.006	.237±.000	.239±.005	.249±.005	.239±.000	.224±.001	.200±.004
Mid-lk So.	.033	.364	.294±.006	.263±.010	.273±.006	.266±.012	.265±.010	.236±.013	.211±.005

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 3/28/18.

AGP #19 H₂O Collection 3/28/18	Date Collected	Time Collected	Lake Surface T (°C)	Collection Depth (m)	Lake Chl. <i>a</i> (µg/l)	Observations	Extracted Chlor. <i>a</i> AGP D7 4/4/18	Extracted Chlor. <i>a</i> AGP D13 4/10/18	Final AGP Results Chl. <i>a</i> ± s.d. (µg/l)
<u>Nearshore:</u>									
Sunnyside	3/28/18	14:00	NA	1	.21	Very good Clarity	.49 ± .06	.60 ± .05	.60 ± .05
Tahoe City	3/28/18	9:10	5.5	1	.13	Very good Clarity	.62 ± .09	.77 ± .01	.77 ± .01
Kings Beach	3/28/18	10:10	6.0	1	.28±.01	Very good Clarity	.88 ± .13	.90 ± .05	1.00 ± .00
Crystal Bay	3/28/18	10:30	5.8	1	.66		.71 ± .17	.57 ± .01	.71 ± .02
Glenbrook	3/28/18	11:05	6.0	1	.57±.02		.75 ± .09	.82 ± .12	.82 ± .01
Zephyr	3/28/18	11:30	6.5	1	.71		1.23 ± 0	.88 ± .01	1.23 ± .00
Timber Cove	3/28/18	12:00	6.5	1	.54	Gold-green color	1.16 ± .03	.41 ± .08	1.16 ± .03
Tahoe Keys	3/28/18	12:20	6.5	1	.59		.95 ± .04	.46 ± .11	.95 ± .04
Camp Rich.	3/28/18	12:30	6.5	1	.39		1.00 ± .15	.51 ± .06	1.00 ± .15
Emerald Bay	3/28/18	13:00	5.0	1	1.39	Green color	.88 ± .11	.57 ± .06	1.39
Rubicon Bay	3/28/18	13:35	NA	1	.05e	Excellent Clarity	.85 ± .03	1.20 ± .03	1.20 ± .03
<u>Mid-Lake:</u>									
Mid-lk No.	3/28/18	9:34	5.5	1	.33±.01	Very good Clarity	.41 ± .04	.48 ± .06	.48 ± .06
Mid-lk So.	3/28/18	11:50	6.5	1	.37		.67 ± .06	.72 ± .03	.76 ± .00
Experiment Daily Fluor.	Backgrd. Fluor. GF/F Fil.	D0 Fluor. 3/28/18 18:45	D2 Fluor. 3/30/18 12:30	D4 Fluor. 4/1/18 12:05	D6 Fluor. 4/3/18	D7 Fluor. 4/4/18 11:15	D9 Fluor. 4/6/18 12:25	D11 Fluor. 4/8/18 12:45	D13 Fluor. 4/10/18 12:35
Sunnyside	.026	.235±.005	.259±.003	.353± .012	.493± .002	.560± .001	.684± .015	.746± .003	.768± .001
Tahoe City	.028	.212±.008	.209±.001	.316± .001	.492± .006	.529± .006	.721± .004	.819± .008	.852± .036
Kings Beach	.033	.352± .009	.371± .006	.487± .001	.624± .030	.678± .021	.800± .016	.861± .003	.726± .013
Crystal Bay	.038	.500± .008	.411± .004	.463± .033	.515± .018	.549± .013	.570± .010	.574± .023	.516± .023
Glenbrook	.029	.485± .011	.387± .025	.472± .011	.563± .028	.584± .018	.659± .014	.683± .008	.601± .012
Zephyr	.045	.609± .012	.572± .013	.724± .034	.842± .018	.909± .004	.938± .006	.850± .004	.735± .006
Timber Cove	.131	.642± .001	.635± .012	.930± .025	1.07± .028	1.09± .057	1.024± .065	.859± .027	.672± .006
Tahoe Keys	.062	.522± .006	.509± .002	.718± .004	.892± .018	.918± .005	.893± .028	.801± .000	.640± .011
Camp Rich.	.081	.492± .006	.497± .006	.691± .009	.855± .018	.908± .001	.888± .006	.782± .005	.663± .004
Emerald Bay	.131	.746± .028	.614± .011	.580± .019	.558± .013	.576± .020	.565± .008	.548± .016	.512± .007
Rubicon Bay	.027	.177± .001	.199± .001	.302± .013	.596± .018	.710± .025	1.075± .035	1.335± .078	1.42± .028
<u>Mid-Lake:</u>									
Mid-lk No.	.027	.271± .004	.224± .002	.288± .003	.334± .001	.351± .015	.399± .003	.448± .011	.466± .014
Mid-lk So.	.033	.425± .000	.373± .003	.445± .003	.511± .002	.541± .011	.585± .003	.622± .003	.595± .008

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 6/8/18.

AGP #20 H₂O Collection 6/8/18	Date Collected	Time Collected	Lake Surface T (°C)	Collection Depth (m)	Lake Chl. <i>a</i> (µg/l)	Observations	Extracted Chlor. <i>a</i> AGP D6 6/14/18		Final AGP Results Chl. <i>a</i> ± s.d. (µg/l)
<u>Nearshore:</u>									
Sunnyside	6/8/18	13:05	13.0	1	.08±.00		.12 ± .03		.14 ± .00
Tahoe City	6/8/18	8:10	12.0	1	.22±.04		.20 ± .01		.22 ± .04
Kings Beach	6/8/18	9:10	12.5	1	.17±.01		.14 ± .02		.17 ± .01
Crystal Bay	6/8/18	9:35	14.0	1	.11±.01		.11 ± .01		.12 ± .01
Glenbrook	6/8/18	10:20	14.0	1	.12±.01		.15 ± .01		.15 ± .01
Zephyr	6/8/18	10:40	14.5	1	.13±.02		.19 ± .01		.20 ± .00
Timber Cove	6/8/18	11:15	15.5	1	.09±.01		.22 ± .01		.27 ± .01
Tahoe Keys	6/8/18	11:30	14.8	1	.12±.00		.29 ± .03		.29 ± .03
Camp Rich.	6/8/18	11:43	14.0	1	.12±.02		.13 ± .05		.14 ± .02
Emerald Bay	6/8/18	12:15	17.0	1	.25±.01		.19 ± .03		.25 ± .01
Rubicon Bay	6/8/18	12:40	15.5	1	.11±.01		.12 ± .02		.13 ± .00
<u>Mid-Lake:</u>									
Mid-lk No.	6/8/18	8:30	12.0	1	.13±.01		.12 ± .01		.13 ± .01
Mid-lk So.	6/8/18	10:50	14.0	1	.10±.02		.13 ± .00		.13 ± .00
Experiment Daily Fluor.	Backgrd. Fluor. GF/F Fil.	D0 Fluor. 6/8/18 18:20	D2 Fluor. 6/10/18 12:10	D4 Fluor. 6/12/18 13:00	D6 Fluor. 6/14/18 14:55	D8 Fluor. 6/16/18 12:35	D11 Fluor. 6/19/18 13:15	D13 Fluor. 6/21/18 13:45	
Sunnyside	.014	.128±.002	.164±.001	.136±.001	.135±.002	.140±.004	.139±.003	.144±.007	
Tahoe City	.011	.202±.002	.200±.001	.147±.004	.153±.006	.158±.002	.167±.001	.170±.001	
Kings Beach	.011	.175±.001	.190±.007	.146±.002	.145±.001	.145±.007	.163±.008	.174±.005	
Crystal Bay	.016	.139±.008	.155±.004	.124±.004	.124±.000	.131±.005	.126±.008	.127±.001	
Glenbrook	.015	.152±.007	.163±.001	.125±.011	.137±.004	.145±.008	.140±.006	.159±.001	
Zephyr	.028	.161±.000	.197±.001	.190±.000	.183±.006	.162±.002	.167±.011	.193±.002	
Timber Cove	.024	.123±.001	.198±.002	.252±.011	.234±.007	.164±.008	.129±.011	.140±.002	
Tahoe Keys	.019	.141±.003	.217±.005	.235±.002	.231±.001	.186±.004	.157±.001	.177±.001	
Camp Rich.	.012	.157±.001	.171±.013	.141±.001	.148±.006	.133±.005	.140±.008	.143±.003	
Emerald Bay	.052	.261±.001	.244±.001	.217±.006	.198±.001	.197±.005	.181±.001	.172±.011	
Rubicon Bay	.013	.166±.003	.161±.001	.128±.006	.124±.001	.124±.002	.147±.019	.170±.042	
<u>Mid-Lake:</u>									
Mid-lk No.	.007	.153±.006	.158±.001	.110±.000	.111±.007	.111±.007	.118±.000	.135±.001	
Mid-lk So.	.016	.134±.004	.143±.003	.132±.007	.145±.001	.138±.001	.136±.002	.139±.001	

Appendix 2. Phytoplankton Enumeration Results

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
6/28/17 9:10	Tahoe City	1	Diatoms	Achnanthes lanceolata var. elliptica	757	0.09
6/28/17 9:10	Tahoe City	1	Diatoms	Cyclotella comensis	29032	12.43
6/28/17 9:10	Tahoe City	1	Diatoms	Cyclotella gordonensis	175806	23.20
6/28/17 9:10	Tahoe City	1	Diatoms	Cymbella	50	0.06
6/28/17 9:10	Tahoe City	1	Diatoms	Diatoma vulgare	252	1.13
6/28/17 9:10	Tahoe City	1	Diatoms	Epithemia sorex	908	5.45
6/28/17 9:10	Tahoe City	1	Diatoms	Epithemia zebra	100	2.77
6/28/17 9:10	Tahoe City	1	Diatoms	Staurosirella pinnata	1110	0.16
6/28/17 9:10	Tahoe City	1	Diatoms	Gomphonema subtile	100	0.08
6/28/17 9:10	Tahoe City	1	Diatoms	Mastogloia smithii	100	0.27
6/28/17 9:10	Tahoe City	1	Diatoms	Navicula pupula	201	0.35
6/28/17 9:10	Tahoe City	1	Diatoms	Navicula radiosa	100	1.30
6/28/17 9:10	Tahoe City	1	Diatoms	Nitzschia	605	10.08
6/28/17 9:10	Tahoe City	1	Diatoms	Rhopalodia gibba	151	3.73
6/28/17 9:10	Tahoe City	1	Diatoms	Synedra acus	2928	12.87
6/28/17 9:10	Tahoe City	1	Diatoms	Synedra pulchella var. minuta	50	0.04
6/28/17 9:10	Tahoe City	1	Chrysophytes	Bitrichia chodatii	3225	0.35
6/28/17 9:10	Tahoe City	1	Chrysophytes	Dinobryon sociale v. americanum	403	0.08
6/28/17 9:10	Tahoe City	1	Chrysophytes	Kephyrion globosa	4838	0.37
6/28/17 9:10	Tahoe City	1	Chrysophytes	Kephyrion rubri-claustri	1612	0.11
6/28/17 9:10	Tahoe City	1	Cryptomonads	Rhodomonas lacustris	3225	0.93
6/28/17 9:10	Tahoe City	1	Dinoflagellates	Gymnodinium fuscum	100	1.48
6/28/17 9:10	Tahoe City	1	Dinoflagellates	Peridinium (large)	1312	1.60
6/28/17 9:10	Tahoe City	1	Green Algae	Ankistrodesmus spiralis	302	0.04
6/28/17 9:10	Tahoe City	1	Green Algae	Cosmarium bioculatum	4838	2.16
6/28/17 9:10	Tahoe City	1	Green Algae	Cosmarium phaseolus	705	1.37
6/28/17 9:10	Tahoe City	1	Green Algae	Elakatothrix gelatinosa	1211	0.10
6/28/17 9:10	Tahoe City	1	Green Algae	Oocystis parva	100	0.01
6/28/17 9:10	Tahoe City	1	Green Algae	Planktonema lauterbornii	2271	0.14
6/28/17 9:10	Tahoe City	1	Green Algae	Tetraedron minimum v. tetralobulatum	3225	0.17
6/28/17 9:10	Tahoe City	1	Haptophyte	Chrysochromulina parva	8064	0.37
6/28/17 9:30	Mid-Lake North	1	Diatoms	Achnanthes lanceolata var. elliptica	285	0.03
6/28/17 9:30	Mid-Lake North	1	Diatoms	Cyclotella comensis	6086	2.61
6/28/17 9:30	Mid-Lake North	1	Diatoms	Cyclotella gordonensis	173462	26.00
6/28/17 9:30	Mid-Lake North	1	Diatoms	Synedra acus	6858	30.13
6/28/17 9:30	Mid-Lake North	1	Chrysophytes	Bitrichia chodatii	3043	0.33

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm ³ /m ³)
6/28/17 9:30	Mid-Lake North	1	Chrysophytes	Kephrion rubri-claustri	4564	0.30
6/28/17 9:30	Mid-Lake North	1	Dinoflagellates	Peridinium (large)	952	1.16
6/28/17 9:30	Mid-Lake North	1	Green Algae	Ankistrodesmus spiralis	285	0.04
6/28/17 9:30	Mid-Lake North	1	Green Algae	Cosmarium bioculatum	3804	1.70
6/28/17 9:30	Mid-Lake North	1	Green Algae	Elakatothrix gelatinosa	1047	0.09
6/28/17 9:30	Mid-Lake North	1	Green Algae	Planktonema lauterbornii	2286	0.14
6/28/17 9:30	Mid-Lake North	1	Haptophyte	Chrysochromulina parva	4564	0.21
6/28/17 10:05	Kings Beach	1	Diatoms	Achnanthes lanceolata var. elliptica	769	0.09
6/28/17 10:05	Kings Beach	1	Diatoms	Cyclotella comensis	21505	9.21
6/28/17 10:05	Kings Beach	1	Diatoms	Cyclotella gordonensis	190475	33.98
6/28/17 10:05	Kings Beach	1	Diatoms	Epithemia sorex	192	1.15
6/28/17 10:05	Kings Beach	1	Diatoms	Fragilaria capucina	673	0.74
6/28/17 10:05	Kings Beach	1	Diatoms	Mastogloia smithii	144	0.39
6/28/17 10:05	Kings Beach	1	Diatoms	Nitzschia	384	6.40
6/28/17 10:05	Kings Beach	1	Diatoms	Synedra acus	6442	28.30
6/28/17 10:05	Kings Beach	1	Chrysophytes	Kephyrion globosa	1536	0.12
6/28/17 10:05	Kings Beach	1	Chrysophytes	Kephrion rubri-claustri	5376	0.35
6/28/17 10:05	Kings Beach	1	Cryptomonads	Rhodomonas lacustris	3072	0.88
6/28/17 10:05	Kings Beach	1	Dinoflagellates	Gymnodinium fuscum	96	1.42
6/28/17 10:05	Kings Beach	1	Dinoflagellates	Peridinium (large)	576	0.70
6/28/17 10:05	Kings Beach	1	Green Algae	Ankistrodesmus spiralis	192	0.02
6/28/17 10:05	Kings Beach	1	Green Algae	Cosmarium bioculatum	192	0.09
6/28/17 10:05	Kings Beach	1	Green Algae	Cosmarium phaseolus	96	0.19
6/28/17 10:05	Kings Beach	1	Green Algae	Elakatothrix gelatinosa	1250	0.10
6/28/17 10:05	Kings Beach	1	Green Algae	Planktonema lauterbornii	961	0.06
6/28/17 10:05	Kings Beach	1	Green Algae	Spondylosium planum	769	0.33
6/28/17 10:05	Kings Beach	1	Haptophyte	Chrysochromulina parva	6144	0.28
6/28/17 10:35	Crystal Bay	1	Diatoms	Cyclotella bodanica	97	0.56
6/28/17 10:35	Crystal Bay	1	Diatoms	Cyclotella comensis	3101	1.33
6/28/17 10:35	Crystal Bay	1	Diatoms	Cyclotella gordonensis	156637	22.10
6/28/17 10:35	Crystal Bay	1	Diatoms	Epithemia sorex	97	0.58
6/28/17 10:35	Crystal Bay	1	Diatoms	Gomphoneis herculeana	97	2.23
6/28/17 10:35	Crystal Bay	1	Diatoms	Synedra acus	5048	22.18
6/28/17 10:35	Crystal Bay	1	Chrysophytes	Bitrichia chodatii	1550	0.17
6/28/17 10:35	Crystal Bay	1	Chrysophytes	Dinobryon sociale v. americanum	97	0.02
6/28/17 10:35	Crystal Bay	1	Chrysophytes	Kephrion rubri-claustri	3877	0.25

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
6/28/17 10:35	Crystal Bay	1	Cryptomonads	Rhodomonas lacustris	3101	0.89
6/28/17 10:35	Crystal Bay	1	Dinoflagellates	Gymnodinium fuscum	97	1.43
6/28/17 10:35	Crystal Bay	1	Dinoflagellates	Peridinium (large)	1067	1.30
6/28/17 10:35	Crystal Bay	1	Green Algae	Ankistrodesmus spiralis	194	0.02
6/28/17 10:35	Crystal Bay	1	Green Algae	Elakatothrix gelatinosa	1359	0.11
6/28/17 10:35	Crystal Bay	1	Green Algae	Planktonema lauterbornii	1844	0.11
6/28/17 10:35	Crystal Bay	1	Cyanophytes	Anabaena flos-aquae	5533	0.36
6/28/17 11:00	Glenbrook	1	Diatoms	Achnanthes lanceolata var. elliptica	706	0.08
6/28/17 11:00	Glenbrook	1	Diatoms	Cyclotella comensis	1612	0.69
6/28/17 11:00	Glenbrook	1	Diatoms	Cyclotella gordonensis	180644	23.80
6/28/17 11:00	Glenbrook	1	Diatoms	Cymbella	200	0.25
6/28/17 11:00	Glenbrook	1	Diatoms	Epithemia sorex	201	1.21
6/28/17 11:00	Glenbrook	1	Diatoms	Navicula cuspidata	100	1.26
6/28/17 11:00	Glenbrook	1	Diatoms	Navicula radiosa	151	1.96
6/28/17 11:00	Glenbrook	1	Diatoms	Nitzschia	403	6.71
6/28/17 11:00	Glenbrook	1	Diatoms	Synedra acus	7471	32.83
6/28/17 11:00	Glenbrook	1	Diatoms	Synedra parasitica	50	0.01
6/28/17 11:00	Glenbrook	1	Chrysophytes	Bitrichia chodatii	151	0.02
6/28/17 11:00	Glenbrook	1	Chrysophytes	Dinobryon sociale v. americanum	1612	0.30
6/28/17 11:00	Glenbrook	1	Chrysophytes	Kephyrion globosa	3225	0.25
6/28/17 11:00	Glenbrook	1	Chrysophytes	Kephyrion rubri-claustri	2419	0.16
6/28/17 11:00	Glenbrook	1	Dinoflagellates	Peridinium (large)	2524	3.08
6/28/17 11:00	Glenbrook	1	Green Algae	Ankistrodesmus spiralis	201	0.02
6/28/17 11:00	Glenbrook	1	Green Algae	Cosmarium bioculatum	100	0.04
6/28/17 11:00	Glenbrook	1	Green Algae	Cosmarium phaseolus	201	0.39
6/28/17 11:00	Glenbrook	1	Green Algae	Elakatothrix gelatinosa	2827	0.24
6/28/17 11:00	Glenbrook	1	Green Algae	Planktonema lauterbornii	1161	0.07
6/28/17 11:30	Zephyr Cove	1	Diatoms	Achnanthes lanceolata var. elliptica	1190	0.14
6/28/17 11:30	Zephyr Cove	1	Diatoms	Cyclotella bodanica	95	0.55
6/28/17 11:30	Zephyr Cove	1	Diatoms	Cyclotella gordonensis	143031	18.22
6/28/17 11:30	Zephyr Cove	1	Diatoms	Diatoma vulgare	95	0.42
6/28/17 11:30	Zephyr Cove	1	Diatoms	Epithemia sorex	238	1.43
6/28/17 11:30	Zephyr Cove	1	Diatoms	Fragilaria crotonensis	190	0.22
6/28/17 11:30	Zephyr Cove	1	Diatoms	Staurosirella pinnata	571	0.08
6/28/17 11:30	Zephyr Cove	1	Diatoms	Gomphonema acuminatum var. acuminatum	190	0.93
6/28/17 11:30	Zephyr Cove	1	Diatoms	Gomphonema subtile	95	0.08

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
6/28/17 11:30	Zephyr Cove	1	Diatoms	Mastogloia smithii	142	0.38
6/28/17 11:30	Zephyr Cove	1	Diatoms	Aulacoseira granulata var.angustissima f.	428	0.80
6/28/17 11:30	Zephyr Cove	1	Diatoms	Nitzschia palea	95	0.17
6/28/17 11:30	Zephyr Cove	1	Diatoms	Nitzschia	762	12.69
6/28/17 11:30	Zephyr Cove	1	Diatoms	Synedra acus	4048	17.79
6/28/17 11:30	Zephyr Cove	1	Diatoms	Synedra ulna	95	0.95
6/28/17 11:30	Zephyr Cove	1	Chrysophytes	Bitrichia chodatii	95	0.01
6/28/17 11:30	Zephyr Cove	1	Chrysophytes	Dinobryon sociale v. americanum	1521	0.28
6/28/17 11:30	Zephyr Cove	1	Chrysophytes	Kephyrion rubri-claustri	6086	0.40
6/28/17 11:30	Zephyr Cove	1	Dinoflagellates	Gymnodinium fuscum	95	1.40
6/28/17 11:30	Zephyr Cove	1	Dinoflagellates	Peridinium (large)	1333	1.63
6/28/17 11:30	Zephyr Cove	1	Green Algae	Cosmarium phaseolus	285	0.56
6/28/17 11:30	Zephyr Cove	1	Green Algae	Elakatothrix gelatinosa	666	0.06
6/28/17 11:30	Zephyr Cove	1	Green Algae	Oocystis parva	3043	0.30
6/28/17 11:30	Zephyr Cove	1	Green Algae	Planktosphaeria gelatinosa	857	0.15
6/28/17 11:30	Zephyr Cove	1	Green Algae	Planktonema lauterbornii	476	0.03
6/28/17 11:40	Mid-Lake South	1	Diatoms	Achnanthes lanceolata var. elliptica	970	0.11
6/28/17 11:40	Mid-Lake South	1	Diatoms	Cyclotella comensis	5428	2.32
6/28/17 11:40	Mid-Lake South	1	Diatoms	Cyclotella gordonensis	167493	23.06
6/28/17 11:40	Mid-Lake South	1	Diatoms	Nitzschia	388	6.46
6/28/17 11:40	Mid-Lake South	1	Diatoms	Synedra acus	6213	27.30
6/28/17 11:40	Mid-Lake South	1	Chrysophytes	Bitrichia chodatii	2326	0.26
6/28/17 11:40	Mid-Lake South	1	Chrysophytes	Dinobryon sociale v. americanum	388	0.07
6/28/17 11:40	Mid-Lake South	1	Chrysophytes	Kephyrion globosa	775	0.06
6/28/17 11:40	Mid-Lake South	1	Chrysophytes	Kephyrion rubri-claustri	3877	0.25
6/28/17 11:40	Mid-Lake South	1	Dinoflagellates	Peridinium (large)	1067	1.30
6/28/17 11:40	Mid-Lake South	1	Green Algae	Elakatothrix gelatinosa	4563	0.38
6/28/17 11:40	Mid-Lake South	1	Green Algae	Oocystis parva	775	0.08
6/28/17 11:40	Mid-Lake South	1	Green Algae	Planktonema lauterbornii	1553	0.09
6/28/17 11:40	Mid-Lake South	1	Green Algae	Spondylosium planum	194	0.08
6/28/17 11:40	Mid-Lake South	1	Haptophyte	Chrysochromulina parva	7754	0.35
6/28/17 12:00	Timber Cove	1	Diatoms	Achnanthes lanceolata var. elliptica	769	0.09
6/28/17 12:00	Timber Cove	1	Diatoms	Cyclotella gordonensis	46082	6.00
6/28/17 12:00	Timber Cove	1	Diatoms	Cymbella lanceolata	96	1.06
6/28/17 12:00	Timber Cove	1	Diatoms	Epithemia sorex	96	0.58
6/28/17 12:00	Timber Cove	1	Diatoms	Fragilaria capucina	769	0.85

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm ³ /m ³)
6/28/17 12:00	Timber Cove	1	Diatoms	Gomphoneis herculeana	96	2.20
6/28/17 12:00	Timber Cove	1	Diatoms	Navicula pupula	96	0.17
6/28/17 12:00	Timber Cove	1	Diatoms	Nitzschia gracilis	96	0.03
6/28/17 12:00	Timber Cove	1	Diatoms	Nitzschia	1057	17.60
6/28/17 12:00	Timber Cove	1	Diatoms	Synedra acus	5192	22.81
6/28/17 12:00	Timber Cove	1	Diatoms	Synedra ulna	96	0.96
6/28/17 12:00	Timber Cove	1	Chrysophytes	Kephyrion rubri-claustri	3072	0.20
6/28/17 12:00	Timber Cove	1	Cryptomonads	Cryptomonas	480	0.93
6/28/17 12:00	Timber Cove	1	Dinoflagellates	Peridinium inconspicuum	192	0.19
6/28/17 12:00	Timber Cove	1	Dinoflagellates	Peridinium (large)	2259	2.76
6/28/17 12:00	Timber Cove	1	Green Algae	Ankistrodesmus spiralis	288	0.04
6/28/17 12:00	Timber Cove	1	Green Algae	Cosmarium bioculatum	3072	1.37
6/28/17 12:00	Timber Cove	1	Green Algae	Cosmarium phaseolus	96	0.19
6/28/17 12:00	Timber Cove	1	Green Algae	Elakatothrix gelatinosa	961	0.08
6/28/17 12:00	Timber Cove	1	Green Algae	Mougeotia	2019	18.08
6/28/17 12:00	Timber Cove	1	Green Algae	Pediastrum boryanum	3077	0.82
6/28/17 12:00	Timber Cove	1	Green Algae	Planktonema lauterbornii	961	0.06
6/28/17 12:00	Timber Cove	1	Green Algae	Tetraedron minimum v.tetralobulatum	1536	0.08
6/28/17 12:00	Timber Cove	1	Cyanophytes	Anabaena flos-aquae	1346	0.09
6/28/17 12:15	Tahoe Keys	1	Diatoms	Achnanthes lanceolata var. elliptica	769	0.09
6/28/17 12:15	Tahoe Keys	1	Diatoms	Asterionella formosa	288	0.14
6/28/17 12:15	Tahoe Keys	1	Diatoms	Cyclotella gordonensis	100613	14.08
6/28/17 12:15	Tahoe Keys	1	Diatoms	Epithemia sorex	96	0.58
6/28/17 12:15	TKeys	1	Diatoms	Fragilaria capucina	1298	1.43
6/28/17 12:15	Tahoe Keys	1	Diatoms	Fragilaria crotonensis	384	0.45
6/28/17 12:15	Tahoe Keys	1	Diatoms	Staurosirella pinnata	192	0.03
6/28/17 12:15	Tahoe Keys	1	Diatoms	Gomphonema subtile	96	0.08
6/28/17 12:15	Tahoe Keys	1	Diatoms	Navicula pupula	96	0.17
6/28/17 12:15	Tahoe Keys	1	Diatoms	Nitzschia	673	11.21
6/28/17 12:15	Tahoe Keys	1	Diatoms	Rhopalodia gibba	240	5.93
6/28/17 12:15	Tahoe Keys	1	Diatoms	Synedra acus	2596	11.41
6/28/17 12:15	Tahoe Keys	1	Chrysophytes	Bitrichia chodatii	4704	0.52
6/28/17 12:15	Tahoe Keys	1	Chrysophytes	Dinobryon sociale v. americanum	240	0.04
6/28/17 12:15	Tahoe Keys	1	Chrysophytes	Kephyrion globosa	6144	0.47
6/28/17 12:15	Tahoe Keys	1	Chrysophytes	Kephyrion rubri-claustri	6144	0.40
6/28/17 12:15	Tahoe Keys	1	Cryptomonads	Cryptomonas	288	0.56

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
6/28/17 12:15	Tahoe Keys	1	Dinoflagellates	Peridinium (large)	1250	1.53
6/28/17 12:15	Tahoe Keys	1	Green Algae	Cosmarium bioculatum	2304	1.03
6/28/17 12:15	Tahoe Keys	1	Green Algae	Cosmarium phaseolus	96	0.19
6/28/17 12:15	Tahoe Keys	1	Green Algae	Elakatothrix gelatinosa	2019	0.17
6/28/17 12:15	Tahoe Keys	1	Green Algae	Planktonema lauterbornii	2500	0.15
6/28/17 12:15	Tahoe Keys	1	Green Algae	Zygnema	96	1.94
6/28/17 12:15	Tahoe Keys	1	Cyanophytes	Anabaena flos-aquae	4423	0.29
6/28/17 12:15	Tahoe Keys	1	Haptophyte	Chrysochromulina parva	5376	0.25
6/28/17 12:25	Camp Richardson	1	Diatoms	Achnanthes lanceolata var. elliptica	1274	0.15
6/28/17 12:25	Camp Richardson	1	Diatoms	Cyclotella gordonensis	106482	18.77
6/28/17 12:25	Camp Richardson	1	Diatoms	Cymbella lanceolata	98	1.08
6/28/17 12:25	Camp Richardson	1	Diatoms	Diatoma vulgare	98	0.44
6/28/17 12:25	Camp Richardson	1	Diatoms	Fragilaria crotonensis	588	0.70
6/28/17 12:25	Camp Richardson	1	Diatoms	Staurosirella pinnata	784	0.11
6/28/17 12:25	Camp Richardson	1	Diatoms	Meridion circulare	98	0.39
6/28/17 12:25	Camp Richardson	1	Diatoms	Nitzschia	490	8.16
6/28/17 12:25	Camp Richardson	1	Diatoms	Rhopalodia gibba	98	2.42
6/28/17 12:25	Camp Richardson	1	Diatoms	Synedra acus	2548	11.20
6/28/17 12:25	Camp Richardson	1	Chrysophytes	Bitrichia chodatii	490	0.05
6/28/17 12:25	Camp Richardson	1	Chrysophytes	Dinobryon sociale v. americanum	196	0.04
6/28/17 12:25	Camp Richardson	1	Chrysophytes	Kephyrion globosa	4697	0.36
6/28/17 12:25	Camp Richardson	1	Chrysophytes	Kephyrion rubri-claustri	1565	0.10
6/28/17 12:25	Camp Richardson	1	Cryptomonads	Cryptomonas	98	0.19
6/28/17 12:25	Camp Richardson	1	Cryptomonads	Rhodomonas lacustris	1565	0.45
6/28/17 12:25	Camp Richardson	1	Dinoflagellates	Peridinium (large)	2646	3.23
6/28/17 12:25	Camp Richardson	1	Green Algae	Ankistrodesmus spiralis	196	0.02
6/28/17 12:25	Camp Richardson	1	Green Algae	Cosmarium bioculatum	98	0.04
6/28/17 12:25	Camp Richardson	1	Green Algae	Cosmarium phaseolus	294	0.57
6/28/17 12:25	Camp Richardson	1	Green Algae	Elakatothrix gelatinosa	2156	0.18
6/28/17 12:25	Camp Richardson	1	Cyanophytes	Anabaena flos-aquae	1470	0.10
6/28/17 12:25	Camp Richardson	1	Cyanophytes	Oscillatoria	3430	0.34
6/28/17 12:50	Emerald Bay	1	Diatoms	Achnanthes lanceolata var. elliptica	509	0.06
6/28/17 12:50	Emerald Bay	1	Diatoms	Asterionella formosa	2855	1.38
6/28/17 12:50	Emerald Bay	1	Diatoms	Cyclotella gordonensis	35027	5.04
6/28/17 12:50	Emerald Bay	1	Diatoms	Fragilaria crotonensis	713	0.84
6/28/17 12:50	Emerald Bay	1	Diatoms	Gomphonema subtile	101	0.08

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
6/28/17 12:50	Emerald Bay	1	Diatoms	Nitzschia	4181	69.63
6/28/17 12:50	Emerald Bay	1	Diatoms	Synedra acus	6119	26.89
6/28/17 12:50	Emerald Bay	1	Chrysophytes	Bitrichia chodatii	152	0.02
6/28/17 12:50	Emerald Bay	1	Chrysophytes	Dinobryon sociale v. americanum	407	0.08
6/28/17 12:50	Emerald Bay	1	Chrysophytes	Kephyrion globosa	14662	1.12
6/28/17 12:50	Emerald Bay	1	Chrysophytes	Kephyrion rubri-claustri	2443	0.16
6/28/17 12:50	Emerald Bay	1	Cryptomonads	Cryptomonas	1529	2.95
6/28/17 12:50	Emerald Bay	1	Cryptomonads	Rhodomonas lacustris	8145	2.34
6/28/17 12:50	Emerald Bay	1	Dinoflagellates	Peridinium inconspicuum	611	0.59
6/28/17 12:50	Emerald Bay	1	Dinoflagellates	Peridinium (large)	5507	6.73
6/28/17 12:50	Emerald Bay	1	Green Algae	Ankistrodesmus spiralis	1223	0.15
6/28/17 12:50	Emerald Bay	1	Green Algae	Elakatothrix gelatinosa	917	0.08
6/28/17 12:50	Emerald Bay	1	Green Algae	Oocystis parva	1629	0.16
6/28/17 12:50	Emerald Bay	1	Haptophyte	Chrysochromulina parva	9775	0.45
6/28/17 13:45	Rubicon Bay	1	Diatoms	Achnanthes lanceolata var. elliptica	2254	0.27
6/28/17 13:45	Rubicon Bay	1	Diatoms	Cyclotella comensis	782	0.33
6/28/17 13:45	Rubicon Bay	1	Diatoms	Cyclotella gordonensis	121358	17.70
6/28/17 13:45	Rubicon Bay	1	Diatoms	Diatoma vulgare	147	0.66
6/28/17 13:45	Rubicon Bay	1	Diatoms	Nitzschia	98	1.63
6/28/17 13:45	Rubicon Bay	1	Diatoms	Synedra acus	3430	15.07
6/28/17 13:45	Rubicon Bay	1	Chrysophytes	Bitrichia chodatii	1565	0.17
6/28/17 13:45	Rubicon Bay	1	Chrysophytes	Dinobryon sociale v. americanum	1565	0.29
6/28/17 13:45	Rubicon Bay	1	Chrysophytes	Flagellates (<5µm)	2348	0.02
6/28/17 13:45	Rubicon Bay	1	Chrysophytes	Kephyrion globosa	2348	0.18
6/28/17 13:45	Rubicon Bay	1	Chrysophytes	Kephyrion rubri-claustri	1565	0.10
6/28/17 13:45	Rubicon Bay	1	Dinoflagellates	Peridinium (large)	588	0.72
6/28/17 13:45	Rubicon Bay	1	Green Algae	Ankistrodesmus spiralis	196	0.02
6/28/17 13:45	Rubicon Bay	1	Green Algae	Cosmarium bioculatum	1565	0.70
6/28/17 13:45	Rubicon Bay	1	Green Algae	Cosmarium phaseolus	98	0.19
6/28/17 13:45	Rubicon Bay	1	Green Algae	Elakatothrix gelatinosa	2450	0.21
6/28/17 13:45	Rubicon Bay	1	Green Algae	Oocystis parva	782	0.08
6/28/17 13:45	Rubicon Bay	1	Green Algae	Planktonema lauterbornii	784	0.05
6/28/17 13:45	Rubicon Bay	1	Haptophyte	Chrysochromulina parva	14093	0.64
6/28/17 14:10	Sunnyside	1	Diatoms	Achnanthes lanceolata var. elliptica	2667	0.31
6/28/17 14:10	Sunnyside	1	Diatoms	Cyclotella bodanica	190	1.11
6/28/17 14:10	Sunnyside	1	Diatoms	Cyclotella comensis	760	0.33

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm ³ /m ³)
6/28/17 14:10	Sunnyside	1	Diatoms	Cyclotella gordonensis	127814	15.58
6/28/17 14:10	Sunnyside	1	Diatoms	Cymbella lanceolata	333	3.66
6/28/17 14:10	Sunnyside	1	Diatoms	Epithemia sorex	333	2.00
6/28/17 14:10	Sunnyside	1	Diatoms	Epithemia zebra	47	1.30
6/28/17 14:10	Sunnyside	1	Diatoms	Gomphoneis herculeana	95	2.18
6/28/17 14:10	Sunnyside	1	Diatoms	Navicula radiosa	95	1.23
6/28/17 14:10	Sunnyside	1	Diatoms	Nitzschia	714	11.89
6/28/17 14:10	Sunnyside	1	Diatoms	Rhopalodia gibba	95	2.35
6/28/17 14:10	Sunnyside	1	Diatoms	Synedra acus	5238	23.01
6/28/17 14:10	Sunnyside	1	Diatoms	Synedra ulna	190	1.89
6/28/17 14:10	Sunnyside	1	Chrysophytes	Bitrichia chodatii	142	0.02
6/28/17 14:10	Sunnyside	1	Chrysophytes	Kephyrion globosa	5325	0.41
6/28/17 14:10	Sunnyside	1	Chrysophytes	Kephyrion rubri-claustri	1521	0.10
6/28/17 14:10	Sunnyside	1	Dinoflagellates	Peridinium (large)	95	0.12
6/28/17 14:10	Sunnyside	1	Green Algae	Ankistrodesmus spiralis	904	0.11
6/28/17 14:10	Sunnyside	1	Green Algae	Cosmarium bioculatum	1521	0.68
6/28/17 14:10	Sunnyside	1	Green Algae	Cosmarium phaseolus	381	0.74
6/28/17 14:10	Sunnyside	1	Green Algae	Elakatothrix gelatinosa	1619	0.14
6/28/17 14:10	Sunnyside	1	Green Algae	Mougeotia	142	1.27
6/28/17 14:10	Sunnyside	1	Green Algae	Planktonema lauterbornii	4048	0.25
6/28/17 14:10	Sunnyside	1	Green Algae	Spondylosium planum	190	0.08
6/28/17 14:10	Sunnyside	1	Haptophyte	Chrysochromulina parva	7608	0.35
9/12/17 7:55	Tahoe City	1	Diatoms	Achnanthes lanceolata var. elliptica	3125	0.37
9/12/17 7:55	Tahoe City	1	Diatoms	Cyclotella comensis	3072	1.32
9/12/17 7:55	Tahoe City	1	Diatoms	Cyclotella gordonensis	101382	6.94
9/12/17 7:55	Tahoe City	1	Diatoms	Cymbella	96	0.12
9/12/17 7:55	Tahoe City	1	Diatoms	Diploneis	144	0.67
9/12/17 7:55	Tahoe City	1	Diatoms	Epithemia sorex	2740	16.46
9/12/17 7:55	Tahoe City	1	Diatoms	Epithemia zebra	144	3.99
9/12/17 7:55	Tahoe City	1	Diatoms	Fragilaria capucina	7067	7.81
9/12/17 7:55	Tahoe City	1	Diatoms	Staurosira construens	15289	2.92
9/12/17 7:55	Tahoe City	1	Diatoms	Fragilaria crotonensis	240	0.28
9/12/17 7:55	Tahoe City	1	Diatoms	Staurosirella pinnata	4375	0.63
9/12/17 7:55	Tahoe City	1	Diatoms	Gomphonema acuminatum var. acuminatum	96	0.47
9/12/17 7:55	Tahoe City	1	Diatoms	Aulacoseira granulata var. angustissima f.	2115	3.93
9/12/17 7:55	Tahoe City	1	Diatoms	Navicula pupula	384	0.68

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
9/12/17 7:55	Tahoe City	1	Diatoms	Navicula radiosa	384	4.98
9/12/17 7:55	Tahoe City	1	Diatoms	Nitzschia	2980	49.63
9/12/17 7:55	Tahoe City	1	Diatoms	Synedra acus	5529	24.29
9/12/17 7:55	Tahoe City	1	Diatoms	Synedra ulna	144	1.44
9/12/17 7:55	Tahoe City	1	Chrysophytes	Dinobryon	4608	0.87
9/12/17 7:55	Tahoe City	1	Chrysophytes	Flagellates (<5µm)	6144	0.05
9/12/17 7:55	Tahoe City	1	Chrysophytes	Kephyrion cupliforme	3840	0.32
9/12/17 7:55	Tahoe City	1	Chrysophytes	Kephyrion globosa	21505	1.65
9/12/17 7:55	Tahoe City	1	Chrysophytes	Kephyrion rubri-claustri	9984	0.66
9/12/17 7:55	Tahoe City	1	Cryptomonads	Cryptomonas	865	1.67
9/12/17 7:55	Tahoe City	1	Dinoflagellates	Peridinium inconspicuum	1057	1.02
9/12/17 7:55	Tahoe City	1	Dinoflagellates	Peridinium (large)	10866	13.28
9/12/17 7:55	Tahoe City	1	Green Algae	Ankistrodesmus spiralis	9904	1.22
9/12/17 7:55	Tahoe City	1	Green Algae	Cosmarium bioculatum	36866	16.49
9/12/17 7:55	Tahoe City	1	Green Algae	Elakatothrix gelatinosa	1298	0.11
9/12/17 7:55	Tahoe City	1	Green Algae	Gloeocystis	432	0.03
9/12/17 7:55	Tahoe City	1	Green Algae	Pediastrum boryanum	48	0.01
9/12/17 7:55	Tahoe City	1	Green Algae	Planktonema lauterbornii	1971	0.12
9/12/17 7:55	Tahoe City	1	Green Algae	Scenedesmus quadricauda	96	0.03
9/12/17 7:55	Tahoe City	1	Cyanophytes	Dolichospermum spiroides	3509	1.26
9/12/17 7:55	Tahoe City	1	Cyanophytes	Phormidium	2644	0.19
9/12/17 7:55	Tahoe City	1	Haptophyte	Chrysochromulina parva	42242	1.93
9/12/17 8:20	Mid-Lake North	1	Diatoms	Achnanthes lanceolata var. elliptica	1211	0.14
9/12/17 8:20	Mid-Lake North	1	Diatoms	Cyclotella bodanica	100	0.58
9/12/17 8:20	Mid-Lake North	1	Diatoms	Cyclotella gordonensis	158064	14.68
9/12/17 8:20	Mid-Lake North	1	Diatoms	Staurosira construens	1918	0.37
9/12/17 8:20	Mid-Lake North	1	Diatoms	Synedra acus	1009	4.43
9/12/17 8:20	Mid-Lake North	1	Chrysophytes	Kephyrion cupliforme	3225	0.27
9/12/17 8:20	Mid-Lake North	1	Chrysophytes	Kephyrion globosa	12903	0.99
9/12/17 8:20	Mid-Lake North	1	Chrysophytes	Kephyrion rubri-claustri	3225	0.21
9/12/17 8:20	Mid-Lake North	1	Cryptomonads	Rhodomonas lacustris	3225	0.93
9/12/17 8:20	Mid-Lake North	1	Dinoflagellates	Gymnodinium fuscum	201	2.97
9/12/17 8:20	Mid-Lake North	1	Dinoflagellates	Peridinium inconspicuum	7056	6.84
9/12/17 8:20	Mid-Lake North	1	Dinoflagellates	Peridinium (large)	1312	1.60
9/12/17 8:20	Mid-Lake North	1	Green Algae	Ankistrodesmus spiralis	11712	1.45
9/12/17 8:20	Mid-Lake North	1	Green Algae	Cosmarium bioculatum	9677	4.33

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
9/12/17 8:20	Mid-Lake North	1	Green Algae	Elakatothrix gelatinosa	5149	0.43
9/12/17 8:20	Mid-Lake North	1	Green Algae	Oocystis parva	8870	0.86
9/12/17 8:20	Mid-Lake North	1	Green Algae	Planktonema lauterbornii	4341	0.26
9/12/17 8:20	Mid-Lake North	1	Haptophyte	Chrysochromulina parva	32258	1.47
9/12/17 8:47	Kings Beach	1	Diatoms	Achnanthes lanceolata var. elliptica	908	0.11
9/12/17 8:47	Kings Beach	1	Diatoms	Cyclotella gordonensis	112902	11.84
9/12/17 8:47	Kings Beach	1	Diatoms	Diploneis smithii var. pumila	100	0.37
9/12/17 8:47	Kings Beach	1	Diatoms	Epithemia sorex	807	4.85
9/12/17 8:47	Kings Beach	1	Diatoms	Fragilaria capucina	1211	1.34
9/12/17 8:47	Kings Beach	1	Diatoms	Staurosira construens	3836	0.73
9/12/17 8:47	Kings Beach	1	Diatoms	Mastogloia smithii	403	1.09
9/12/17 8:47	Kings Beach	1	Diatoms	Navicula pupula	1312	2.31
9/12/17 8:47	Kings Beach	1	Diatoms	Navicula radiosa	403	5.23
9/12/17 8:47	Kings Beach	1	Diatoms	Navicula tuscula	504	4.14
9/12/17 8:47	Kings Beach	1	Diatoms	Nitzschia	403	6.71
9/12/17 8:47	Kings Beach	1	Diatoms	Rhopalodia gibba	151	3.73
9/12/17 8:47	Kings Beach	1	Diatoms	Synedra acus	4846	21.29
9/12/17 8:47	Kings Beach	1	Chrysophytes	Dinobryon	2419	0.46
9/12/17 8:47	Kings Beach	1	Chrysophytes	Kephyrion globosa	3225	0.25
9/12/17 8:47	Kings Beach	1	Cryptomonads	Rhodomonas lacustris	9677	2.78
9/12/17 8:47	Kings Beach	1	Dinoflagellates	Gymnodinium fuscum	100	1.48
9/12/17 8:47	Kings Beach	1	Dinoflagellates	Peridinium (large)	7370	9.01
9/12/17 8:47	Kings Beach	1	Green Algae	Ankistrodesmus spiralis	12722	1.57
9/12/17 8:47	Kings Beach	1	Green Algae	Cosmarium bioculatum	8870	3.97
9/12/17 8:47	Kings Beach	1	Green Algae	Cosmarium phaseolus	100	0.19
9/12/17 8:47	Kings Beach	1	Green Algae	Elakatothrix gelatinosa	4442	0.37
9/12/17 8:47	Kings Beach	1	Green Algae	Mougeotia	200	1.79
9/12/17 8:47	Kings Beach	1	Green Algae	Oocystis parva	5645	0.55
9/12/17 8:47	Kings Beach	1	Green Algae	Planktosphaeria gelatinosa	1615	0.29
9/12/17 8:47	Kings Beach	1	Green Algae	Planktonema lauterbornii	5553	0.34
9/12/17 8:47	Kings Beach	1	Cyanophytes	Dolichospermum spiroides	959	0.34
9/12/17 8:47	Kings Beach	1	Haptophyte	Chrysochromulina parva	22580	1.03
9/12/17 9:10	Crystal Bay	1	Diatoms	Achnanthes lanceolata var. elliptica	1211	0.14
9/12/17 9:10	Crystal Bay	1	Diatoms	Cyclotella bodanica	201	1.17
9/12/17 9:10	Crystal Bay	1	Diatoms	Cyclotella gordonensis	112902	10.66
9/12/17 9:10	Crystal Bay	1	Diatoms	Diatoma vulgare	454	2.03

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
9/12/17 9:10	Crystal Bay	1	Diatoms	Epithemia sorex	2019	12.13
9/12/17 9:10	Crystal Bay	1	Diatoms	Epithemia zebra	403	11.17
9/12/17 9:10	Crystal Bay	1	Diatoms	Fragilaria capucina	2322	2.57
9/12/17 9:10	Crystal Bay	1	Diatoms	Mastogloia smithii	201	0.54
9/12/17 9:10	Crystal Bay	1	Diatoms	Navicula pupula	3130	5.52
9/12/17 9:10	Crystal Bay	1	Diatoms	Navicula radiosa	504	6.54
9/12/17 9:10	Crystal Bay	1	Diatoms	Navicula tuscula	504	4.14
9/12/17 9:10	Crystal Bay	1	Diatoms	Nitzschia	1413	23.53
9/12/17 9:10	Crystal Bay	1	Diatoms	Pinnularia	100	0.40
9/12/17 9:10	Crystal Bay	1	Diatoms	Rhopalodia gibba	555	13.70
9/12/17 9:10	Crystal Bay	1	Diatoms	Synedra acus	4947	21.74
9/12/17 9:10	Crystal Bay	1	Chrysophytes	Dinobryon	1612	0.30
9/12/17 9:10	Crystal Bay	1	Chrysophytes	Kephyrion globosa	9677	0.74
9/12/17 9:10	Crystal Bay	1	Chrysophytes	Kephyrion rubri-claustri	6451	0.42
9/12/17 9:10	Crystal Bay	1	Cryptomonads	Rhodomonas lacustris	6451	1.85
9/12/17 9:10	Crystal Bay	1	Dinoflagellates	Gymnodinium fuscum	100	1.48
9/12/17 9:10	Crystal Bay	1	Dinoflagellates	Peridinium inconspicuum	1211	1.17
9/12/17 9:10	Crystal Bay	1	Dinoflagellates	Peridinium (large)	3029	3.70
9/12/17 9:10	Crystal Bay	1	Green Algae	Ankistrodesmus spiralis	11106	1.37
9/12/17 9:10	Crystal Bay	1	Green Algae	Closterium	50	0.22
9/12/17 9:10	Crystal Bay	1	Green Algae	Cosmarium bioculatum	25806	11.55
9/12/17 9:10	Crystal Bay	1	Green Algae	Elakatothrix gelatinosa	2625	0.22
9/12/17 9:10	Crystal Bay	1	Green Algae	Mougeotia	1312	11.75
9/12/17 9:10	Crystal Bay	1	Green Algae	Oocystis parva	12096	1.18
9/12/17 9:10	Crystal Bay	1	Green Algae	Planktonema lauterbornii	2928	0.18
9/12/17 9:10	Crystal Bay	1	Haptophyte	Chrysochromulina parva	32258	1.47
9/12/17 9:45	Glenbrook	1	Diatoms	Achnanthes lanceolata var. elliptica	2322	0.27
9/12/17 9:45	Glenbrook	1	Diatoms	Cyclotella gordonensis	16128	1.49
9/12/17 9:45	Glenbrook	1	Diatoms	Epithemia sorex	302	1.81
9/12/17 9:45	Glenbrook	1	Diatoms	Staurosira construens	908	0.17
9/12/17 9:45	Glenbrook	1	Diatoms	Navicula pupula	907	1.60
9/12/17 9:45	Glenbrook	1	Diatoms	Nitzschia	605	10.08
9/12/17 9:45	Glenbrook	1	Diatoms	Synedra acus	2625	11.53
9/12/17 9:45	Glenbrook	1	Chrysophytes	Flagellates (<5µm)	645	0.01
9/12/17 9:45	Glenbrook	1	Chrysophytes	Kephyrion globosa	1612	0.12
9/12/17 9:45	Glenbrook	1	Chrysophytes	Kephyrion rubri-claustri	2580	0.17

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm ³ /m ³)
9/12/17 9:45	Glenbrook	1	Cryptomonads	Rhodomonas lacustris	322	0.09
9/12/17 9:45	Glenbrook	1	Dinoflagellates	Gymnodinium fuscum	302	4.46
9/12/17 9:45	Glenbrook	1	Dinoflagellates	Peridinium inconspicuum	1413	1.37
9/12/17 9:45	Glenbrook	1	Dinoflagellates	Peridinium (large)	1514	1.85
9/12/17 9:45	Glenbrook	1	Green Algae	Ankistrodesmus spiralis	8228	1.02
9/12/17 9:45	Glenbrook	1	Green Algae	Cosmarium bioculatum	4516	2.02
9/12/17 9:45	Glenbrook	1	Green Algae	Elakatothrix gelatinosa	5250	0.44
9/12/17 9:45	Glenbrook	1	Green Algae	Mougeotia	504	4.51
9/12/17 9:45	Glenbrook	1	Green Algae	Oocystis parva	645	0.06
9/12/17 9:45	Glenbrook	1	Green Algae	Planktosphaeria gelatinosa	2423	0.44
9/12/17 9:45	Glenbrook	1	Green Algae	Planktonema lauterbornii	1817	0.11
9/12/17 9:45	Glenbrook	1	Green Algae	Spondylosium planum	201	0.09
9/12/17 9:45	Glenbrook	1	Haptophyte	Chrysochromulina parva	5161	0.24
9/12/17 10:04	Zephyr Cove	1	Diatoms	Achnanthes lanceolata var. elliptica	908	0.11
9/12/17 10:04	Zephyr Cove	1	Diatoms	Cyclotella comensis	3225	1.38
9/12/17 10:04	Zephyr Cove	1	Diatoms	Cyclotella gordonensis	45160	4.03
9/12/17 10:04	Zephyr Cove	1	Diatoms	Epithemia sorex	605	3.63
9/12/17 10:04	Zephyr Cove	1	Diatoms	Staurosira construens	1211	0.23
9/12/17 10:04	Zephyr Cove	1	Diatoms	Gomphonema acuminatum var. acuminatum	100	0.49
9/12/17 10:04	Zephyr Cove	1	Diatoms	Gomphonema subtile	100	0.08
9/12/17 10:04	Zephyr Cove	1	Diatoms	Mastogloia smithii	100	0.27
9/12/17 10:04	Zephyr Cove	1	Diatoms	Navicula radiosa	403	5.23
9/12/17 10:04	Zephyr Cove	1	Diatoms	Nitzschia	908	15.12
9/12/17 10:04	Zephyr Cove	1	Diatoms	Rhopalodia gibba	201	4.96
9/12/17 10:04	Zephyr Cove	1	Diatoms	Synedra acus	1716	7.54
9/12/17 10:04	Zephyr Cove	1	Diatoms	Synedra ulna	100	1.00
9/12/17 10:04	Zephyr Cove	1	Chrysophytes	Dinobryon	100	0.02
9/12/17 10:04	Zephyr Cove	1	Chrysophytes	Flagellates (<5µm)	8064	0.06
9/12/17 10:04	Zephyr Cove	1	Chrysophytes	Kephyrion globosa	9677	0.74
9/12/17 10:04	Zephyr Cove	1	Chrysophytes	Kephyrion rubri-claustri	8064	0.53
9/12/17 10:04	Zephyr Cove	1	Cryptomonads	Cryptomonas	100	0.19
9/12/17 10:04	Zephyr Cove	1	Dinoflagellates	Peridinium inconspicuum	2423	2.35
9/12/17 10:04	Zephyr Cove	1	Dinoflagellates	Peridinium (large)	2120	2.59
9/12/17 10:04	Zephyr Cove	1	Green Algae	Ankistrodesmus spiralis	5654	0.70
9/12/17 10:04	Zephyr Cove	1	Green Algae	Botryococcus braunii	6563	73.28
9/12/17 10:04	Zephyr Cove	1	Green Algae	Cosmarium bioculatum	12096	5.41

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
9/12/17 10:04	Zephyr Cove	1	Green Algae	Cosmarium phaseolus	1312	2.56
9/12/17 10:04	Zephyr Cove	1	Green Algae	Elakatothrix gelatinosa	1918	0.16
9/12/17 10:04	Zephyr Cove	1	Green Algae	Mougeotia	1312	11.75
9/12/17 10:04	Zephyr Cove	1	Green Algae	Oocystis parva	12903	1.25
9/12/17 10:04	Zephyr Cove	1	Green Algae	Planktosphaeria gelatinosa	2423	0.44
9/12/17 10:04	Zephyr Cove	1	Green Algae	Planktonema lauterbornii	7067	0.43
9/12/17 10:04	Zephyr Cove	1	Green Algae	Scenedesmus quadricauda	100	0.03
9/12/17 10:04	Zephyr Cove	1	Green Algae	Tetraedron minimum v.tetralobulatum	1612	0.08
9/12/17 10:04	Zephyr Cove	1	Haptophyte	Chrysochromulina parva	19354	0.88
9/12/17 10:20	Mid-Lake South	1	Diatoms	Achnanthes lanceolata var. elliptica	2928	0.35
9/12/17 10:20	Mid-Lake South	1	Diatoms	Cyclotella gordonensis	106450	10.25
9/12/17 10:20	Mid-Lake South	1	Diatoms	Nitzschia	201	3.35
9/12/17 10:20	Mid-Lake South	1	Diatoms	Synedra acus	1514	6.65
9/12/17 10:20	Mid-Lake South	1	Chrysophytes	Flagellates (<5µm)	8064	0.06
9/12/17 10:20	Mid-Lake South	1	Chrysophytes	Kephyrion cupliforme	1612	0.13
9/12/17 10:20	Mid-Lake South	1	Chrysophytes	Kephyrion globosa	9677	0.74
9/12/17 10:20	Mid-Lake South	1	Chrysophytes	Kephyrion rubri-claustri	3225	0.21
9/12/17 10:20	Mid-Lake South	1	Chrysophytes	Kephyrion spirale	1612	0.05
9/12/17 10:20	Mid-Lake South	1	Cryptomonads	Cryptomonas	403	0.78
9/12/17 10:20	Mid-Lake South	1	Cryptomonads	Rhodomonas lacustris	1612	0.46
9/12/17 10:20	Mid-Lake South	1	Dinoflagellates	Gymnodinium fuscum	100	1.48
9/12/17 10:20	Mid-Lake South	1	Dinoflagellates	Peridinium inconspicuum	2524	2.45
9/12/17 10:20	Mid-Lake South	1	Dinoflagellates	Peridinium (large)	3331	4.07
9/12/17 10:20	Mid-Lake South	1	Green Algae	Ankistrodesmus spiralis	7976	0.98
9/12/17 10:20	Mid-Lake South	1	Green Algae	Botryococcus braunii	8077	90.18
9/12/17 10:20	Mid-Lake South	1	Green Algae	Cosmarium bioculatum	9677	4.33
9/12/17 10:20	Mid-Lake South	1	Green Algae	Cosmarium phaseolus	201	0.39
9/12/17 10:20	Mid-Lake South	1	Green Algae	Elakatothrix gelatinosa	5553	0.47
9/12/17 10:20	Mid-Lake South	1	Green Algae	Mougeotia	403	3.61
9/12/17 10:20	Mid-Lake South	1	Green Algae	Oocystis parva	4838	0.47
9/12/17 10:20	Mid-Lake South	1	Green Algae	Planktosphaeria gelatinosa	7168	1.29
9/12/17 10:20	Mid-Lake South	1	Green Algae	Planktonema lauterbornii	4291	0.26
9/12/17 10:20	Mid-Lake South	1	Green Algae	Scenedesmus quadricauda	100	0.03
9/12/17 10:20	Mid-Lake South	1	Green Algae	Xanthidium	100	0.04
9/12/17 10:20	Mid-Lake South	1	Haptophyte	Chrysochromulina parva	29032	1.33
9/12/17 10:33	Timber Cove	1	Diatoms	Achnanthes lanceolata var. elliptica	504	0.06

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
9/12/17 10:33	Timber Cove	1	Diatoms	Cocconeis placentula	151	0.18
9/12/17 10:33	Timber Cove	1	Diatoms	Cyclotella gordonensis	40322	4.31
9/12/17 10:33	Timber Cove	1	Diatoms	Cymbella	100	0.13
9/12/17 10:33	Timber Cove	1	Diatoms	Epithemia sorex	504	3.03
9/12/17 10:33	Timber Cove	1	Diatoms	Epithemia zebra	201	5.57
9/12/17 10:33	Timber Cove	1	Diatoms	Staurosira construens	1514	0.29
9/12/17 10:33	Timber Cove	1	Diatoms	Aulacoseira granulata var.angustissima f.	302	0.56
9/12/17 10:33	Timber Cove	1	Diatoms	Navicula pupula	100	0.18
9/12/17 10:33	Timber Cove	1	Diatoms	Navicula radiosa	302	3.92
9/12/17 10:33	Timber Cove	1	Diatoms	Navicula tuscula	201	1.65
9/12/17 10:33	Timber Cove	1	Diatoms	Nitzschia	705	11.74
9/12/17 10:33	Timber Cove	1	Diatoms	Synedra acus	1009	4.43
9/12/17 10:33	Timber Cove	1	Chrysophytes	Dinobryon	3225	0.61
9/12/17 10:33	Timber Cove	1	Chrysophytes	Flagellates (<5µm)	6451	0.05
9/12/17 10:33	Timber Cove	1	Chrysophytes	Kephyrion cupliforme	9677	0.81
9/12/17 10:33	Timber Cove	1	Chrysophytes	Kephyrion globosa	8870	0.68
9/12/17 10:33	Timber Cove	1	Cryptomonads	Cryptomonas	302	0.58
9/12/17 10:33	Timber Cove	1	Dinoflagellates	Peridinium inconspicuum	1312	1.27
9/12/17 10:33	Timber Cove	1	Dinoflagellates	Peridinium (large)	1413	1.73
9/12/17 10:33	Timber Cove	1	Green Algae	Ankistrodesmus spiralis	4139	0.51
9/12/17 10:33	Timber Cove	1	Green Algae	Cosmarium bioculatum	10483	4.69
9/12/17 10:33	Timber Cove	1	Green Algae	Elakatothrix gelatinosa	2726	0.23
9/12/17 10:33	Timber Cove	1	Green Algae	Oocystis parva	5645	0.55
9/12/17 10:33	Timber Cove	1	Green Algae	Planktosphaeria gelatinosa	6462	1.16
9/12/17 10:33	Timber Cove	1	Green Algae	Planktonema lauterbornii	2170	0.13
9/12/17 10:33	Timber Cove	1	Green Algae	Scenedesmus quadricauda	151	0.04
9/12/17 10:33	Timber Cove	1	Cyanophytes	Phormidium.	6310	0.44
9/12/17 10:33	Timber Cove	1	Haptophyte	Chrysochromulina parva	25806	1.18
9/12/17 10:52	Tahoe Keys	1	Diatoms	Achnanthes lanceolata var. elliptica	1009	0.12
9/12/17 10:52	Tahoe Keys	1	Diatoms	Cyclotella comensis	1612	0.69
9/12/17 10:52	Tahoe Keys	1	Diatoms	Cyclotella gordonensis	25806	1.62
9/12/17 10:52	Tahoe Keys	1	Diatoms	Epithemia sorex	605	3.63
9/12/17 10:52	Tahoe Keys	1	Diatoms	Epithemia zebra	201	5.57
9/12/17 10:52	Tahoe Keys	1	Diatoms	Staurosira construens	6966	1.33
9/12/17 10:52	Tahoe Keys	1	Diatoms	Aulacoseira granulata var.angustissima f.	908	1.69
9/12/17 10:52	Tahoe Keys	1	Diatoms	Navicula pupula	503	0.89

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
9/12/17 10:52	Tahoe Keys	1	Diatoms	Nitzschia	807	13.44
9/12/17 10:52	Tahoe Keys	1	Diatoms	Rhopalodia gibba	100	2.47
9/12/17 10:52	Tahoe Keys	1	Diatoms	Synedra acus	1312	5.76
9/12/17 10:52	Tahoe Keys	1	Diatoms	Synedra ulna	100	1.00
9/12/17 10:52	Tahoe Keys	1	Chrysophytes	Dinobryon	201	0.04
9/12/17 10:52	Tahoe Keys	1	Chrysophytes	Kephyrion globosa	9677	0.74
9/12/17 10:52	Tahoe Keys	1	Cryptomonads	Cryptomonas	4139	8.00
9/12/17 10:52	Tahoe Keys	1	Cryptomonads	Rhodomonas lacustris	90322	25.95
9/12/17 10:52	Tahoe Keys	1	Dinoflagellates	Gymnodinium fuscum	201	2.97
9/12/17 10:52	Tahoe Keys	1	Dinoflagellates	Peridinium inconspicuum	201	0.19
9/12/17 10:52	Tahoe Keys	1	Dinoflagellates	Peridinium (large)	8077	9.87
9/12/17 10:52	Tahoe Keys	1	Green Algae	Cosmarium bioculatum	16129	7.22
9/12/17 10:52	Tahoe Keys	1	Green Algae	Elakatothrix gelatinosa	1615	0.14
9/12/17 10:52	Tahoe Keys	1	Green Algae	Mougeotia	504	4.51
9/12/17 10:52	Tahoe Keys	1	Green Algae	Oocystis parva	9878	0.96
9/12/17 10:52	Tahoe Keys	1	Green Algae	Planktosphaeria gelatinosa	4846	0.87
9/12/17 10:52	Tahoe Keys	1	Green Algae	Planktonema lauterbornii	908	0.06
9/12/17 10:52	Tahoe Keys	1	Green Algae	Staurasturm planctonicum	50	0.63
9/12/17 10:52	Tahoe Keys	1	Cyanophytes	Dolichospermum spiroides	15414	5.54
9/12/17 10:52	Tahoe Keys	1	Cyanophytes	Phormidium	12116	0.85
9/12/17 10:52	Tahoe Keys	1	Haptophyte	Chrysochromulina parva	19354	0.88
9/12/17 11:05	Camp Richardson	1	Diatoms	Achnanthes lanceolata var. elliptica	1716	0.20
9/12/17 11:05	Camp Richardson	1	Diatoms	Cyclotella gordonensis	102418	10.00
9/12/17 11:05	Camp Richardson	1	Diatoms	Epithemia sorex	706	4.24
9/12/17 11:05	Camp Richardson	1	Diatoms	Fragilaria capucina	2726	3.01
9/12/17 11:05	Camp Richardson	1	Diatoms	Stausosira construens	2625	0.50
9/12/17 11:05	Camp Richardson	1	Diatoms	Gomphonema subtile	100	0.08
9/12/17 11:05	Camp Richardson	1	Diatoms	Navicula pupula	403	0.71
9/12/17 11:05	Camp Richardson	1	Diatoms	Navicula radiosa	201	2.61
9/12/17 11:05	Camp Richardson	1	Diatoms	Nitzschia	504	8.39
9/12/17 11:05	Camp Richardson	1	Diatoms	Synedra acus	2827	12.42
9/12/17 11:05	Camp Richardson	1	Chrysophytes	Kephyrion globosa	5645	0.43
9/12/17 11:05	Camp Richardson	1	Chrysophytes	Kephyrion rubri-claustri	3225	0.21
9/12/17 11:05	Camp Richardson	1	Cryptomonads	Cryptomonas	403	0.78
9/12/17 11:05	Camp Richardson	1	Cryptomonads	Rhodomonas lacustris	12903	3.71
9/12/17 11:05	Camp Richardson	1	Dinoflagellates	Gymnodinium fuscum	100	1.48

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
9/12/17 11:05	Camp Richardson	1	Dinoflagellates	Peridinium inconspicuum	1413	1.37
9/12/17 11:05	Camp Richardson	1	Dinoflagellates	Peridinium (large)	20698	25.29
9/12/17 11:05	Camp Richardson	1	Green Algae	Ankistrodesmus spiralis	10601	1.31
9/12/17 11:05	Camp Richardson	1	Green Algae	Cosmarium bioculatum	8870	3.97
9/12/17 11:05	Camp Richardson	1	Green Algae	Cosmarium botrytis	50	0.50
9/12/17 11:05	Camp Richardson	1	Green Algae	Elakatothrix gelatinosa	4139	0.35
9/12/17 11:05	Camp Richardson	1	Green Algae	Oocystis parva	4536	0.44
9/12/17 11:05	Camp Richardson	1	Green Algae	Planktosphaeria gelatinosa	6058	1.09
9/12/17 11:05	Camp Richardson	1	Green Algae	Planktonema lauterbornii	3836	0.23
9/12/17 11:05	Camp Richardson	1	Green Algae	Scenedesmus quadricauda	100	0.03
9/12/17 11:05	Camp Richardson	1	Green Algae	Tetraedron minimum v.tetralobulatum	6451	0.34
9/12/17 11:05	Camp Richardson	1	Haptophyte	Chrysochromulina parva	25806	1.18
9/12/17 11:28	Emerald Bay	1	Diatoms	Achnanthes lanceolata var. elliptica	3010	0.36
9/12/17 11:28	Emerald Bay	1	Diatoms	Cyclotella gordonensis	48090	3.57
9/12/17 11:28	Emerald Bay	1	Diatoms	Epithemia sorex	92	0.55
9/12/17 11:28	Emerald Bay	1	Diatoms	Staurosirella pinnata	370	0.05
9/12/17 11:28	Emerald Bay	1	Diatoms	Nitzschia	833	13.87
9/12/17 11:28	Emerald Bay	1	Diatoms	Synedra acus	1945	8.55
9/12/17 11:28	Emerald Bay	1	Chrysophytes	Dinobryon	2959	0.56
9/12/17 11:28	Emerald Bay	1	Chrysophytes	Flagellates (<5µm)	8878	0.07
9/12/17 11:28	Emerald Bay	1	Chrysophytes	Kephyrion rubri-claustri	2959	0.19
9/12/17 11:28	Emerald Bay	1	Chrysophytes	Kephyrion spirale	2219	0.07
9/12/17 11:28	Emerald Bay	1	Cryptomonads	Cryptomonas	277	0.54
9/12/17 11:28	Emerald Bay	1	Dinoflagellates	Gymnodinium fuscum	277	4.09
9/12/17 11:28	Emerald Bay	1	Dinoflagellates	Peridinium inconspicuum	277	0.27
9/12/17 11:28	Emerald Bay	1	Dinoflagellates	Peridinium (large)	17600	21.51
9/12/17 11:28	Emerald Bay	1	Green Algae	Ankistrodesmus spiralis	1760	0.22
9/12/17 11:28	Emerald Bay	1	Green Algae	Cosmarium bioculatum	1479	0.66
9/12/17 11:28	Emerald Bay	1	Green Algae	Elakatothrix gelatinosa	2871	0.24
9/12/17 11:28	Emerald Bay	1	Green Algae	Oocystis parva	3980	0.39
9/12/17 11:28	Emerald Bay	1	Haptophyte	Chrysochromulina parva	34773	1.59
9/12/17 12:00	Rubicon Bay	1	Diatoms	Achnanthes lanceolata var. elliptica	4230	0.50
9/12/17 12:00	Rubicon Bay	1	Diatoms	Cyclotella comensis	3072	1.32
9/12/17 12:00	Rubicon Bay	1	Diatoms	Cyclotella gordonensis	103686	10.05
9/12/17 12:00	Rubicon Bay	1	Diatoms	Cymbella	96	0.12
9/12/17 12:00	Rubicon Bay	1	Diatoms	Epithemia sorex	240	1.44

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
9/12/17 12:00	Rubicon Bay	1	Diatoms	Gomphonema subtile	144	0.12
9/12/17 12:00	Rubicon Bay	1	Diatoms	Navicula pupula	480	0.85
9/12/17 12:00	Rubicon Bay	1	Diatoms	Navicula tuscule	96	0.79
9/12/17 12:00	Rubicon Bay	1	Diatoms	Nitzschia	384	6.40
9/12/17 12:00	Rubicon Bay	1	Diatoms	Synedra acus	3942	17.32
9/12/17 12:00	Rubicon Bay	1	Chrysophytes	Kephyrion globosa	3840	0.29
9/12/17 12:00	Rubicon Bay	1	Cryptomonads	Cryptomonas	288	0.56
9/12/17 12:00	Rubicon Bay	1	Cryptomonads	Rhodomonas lacustris	5376	1.54
9/12/17 12:00	Rubicon Bay	1	Dinoflagellates	Gymnodinium fuscum	96	1.42
9/12/17 12:00	Rubicon Bay	1	Dinoflagellates	Peridinium inconspicuum	432	0.42
9/12/17 12:00	Rubicon Bay	1	Dinoflagellates	Peridinium (large)	8798	10.75
9/12/17 12:00	Rubicon Bay	1	Green Algae	Ankistrodesmus spiralis	8510	1.05
9/12/17 12:00	Rubicon Bay	1	Green Algae	Cosmarium bioculatum	14592	6.53
9/12/17 12:00	Rubicon Bay	1	Green Algae	Elakatothrix gelatinosa	4904	0.41
9/12/17 12:00	Rubicon Bay	1	Green Algae	Oocystis parva	9216	0.90
9/12/17 12:00	Rubicon Bay	1	Green Algae	Planktonema lauterbornii	1250	0.08
9/12/17 12:00	Rubicon Bay	1	Green Algae	Tetraspora lemmernanii	1153	0.07
9/12/17 12:00	Rubicon Bay	1	Green Algae	Xanthidium	144	0.06
9/12/17 12:00	Rubicon Bay	1	Cyanophytes	Dolichospermum spiroides	20097	7.22
9/12/17 12:00	Rubicon Bay	1	Cyanophytes	Phormidium	1827	0.13
9/12/17 12:25	Sunnyside	1	Diatoms	Achnanthes lanceolata var. elliptica	1143	0.13
9/12/17 12:25	Sunnyside	1	Diatoms	Cyclotella comensis	3043	1.30
9/12/17 12:25	Sunnyside	1	Diatoms	Cyclotella gordonensis	84449	7.41
9/12/17 12:25	Sunnyside	1	Diatoms	Epithemia sorex	571	3.43
9/12/17 12:25	Sunnyside	1	Diatoms	Fragilaria capucina	476	0.53
9/12/17 12:25	Sunnyside	1	Diatoms	Staurosira construens	1666	0.32
9/12/17 12:25	Sunnyside	1	Diatoms	Mastogloia smithii	95	0.26
9/12/17 12:25	Sunnyside	1	Diatoms	Aulacoseira granulata var. angustissima f.	285	0.53
9/12/17 12:25	Sunnyside	1	Diatoms	Navicula pupula	95	0.17
9/12/17 12:25	Sunnyside	1	Diatoms	Nitzschia	666	11.09
9/12/17 12:25	Sunnyside	1	Diatoms	Synedra acus	2667	11.72
9/12/17 12:25	Sunnyside	1	Diatoms	Synedra ulna	142	1.42
9/12/17 12:25	Sunnyside	1	Chrysophytes	Kephyrion cupliforme	3043	0.25
9/12/17 12:25	Sunnyside	1	Chrysophytes	Kephyrion globosa	17498	1.34
9/12/17 12:25	Sunnyside	1	Chrysophytes	Kephyrion rubri-claustri	3043	0.20
9/12/17 12:25	Sunnyside	1	Chrysophytes	Kephyrion spirale	1521	0.05

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm ³ /m ³)
9/12/17 12:25	Sunnyside	1	Cryptomonads	Cryptomonas	333	0.64
9/12/17 12:25	Sunnyside	1	Cryptomonads	Rhodomonas lacustris	1521	0.44
9/12/17 12:25	Sunnyside	1	Dinoflagellates	Gymnodinium fuscum	95	1.40
9/12/17 12:25	Sunnyside	1	Dinoflagellates	Peridinium inconspicuum	2524	2.45
9/12/17 12:25	Sunnyside	1	Dinoflagellates	Peridinium (large)	4143	5.06
9/12/17 12:25	Sunnyside	1	Green Algae	Ankistrodesmus spiralis	7810	0.96
9/12/17 12:25	Sunnyside	1	Green Algae	Cosmarium bioculatum	6847	3.06
9/12/17 12:25	Sunnyside	1	Green Algae	Elakatothrix gelatinosa	4857	0.41
9/12/17 12:25	Sunnyside	1	Green Algae	Mougeotia	190	1.70
9/12/17 12:25	Sunnyside	1	Green Algae	Oocystis parva	3804	0.37
9/12/17 12:25	Sunnyside	1	Green Algae	Planktonema lauterbornii	3619	0.22
9/12/17 12:25	Sunnyside	1	Green Algae	Scenedesmus quadricauda	47	0.01
9/12/17 12:25	Sunnyside	1	Haptophyte	Chrysochromulina parva	12933	0.59
12/8/17 9:13	Tahoe City	1	Diatoms	Achnanthes lanceolata var. elliptica	769	0.09
12/8/17 9:13	Tahoe City	1	Diatoms	Cyclotella bodanica	96	0.56
12/8/17 9:13	Tahoe City	1	Diatoms	Cyclotella gordonensis	12288	1.05
12/8/17 9:13	Tahoe City	1	Diatoms	Epithemia sorex	480	2.88
12/8/17 9:13	Tahoe City	1	Diatoms	Staurosira construens	576	0.11
12/8/17 9:13	Tahoe City	1	Diatoms	Fragilaria crotonensis	769	0.91
12/8/17 9:13	Tahoe City	1	Diatoms	Gomphonema subtile	96	0.08
12/8/17 9:13	Tahoe City	1	Diatoms	Nitzschia acicularis	96	0.02
12/8/17 9:13	Tahoe City	1	Diatoms	Nitzschia	288	4.80
12/8/17 9:13	Tahoe City	1	Diatoms	Synedra acus	1634	7.18
12/8/17 9:13	Tahoe City	1	Cryptomonads	Cryptomonas	4904	9.47
12/8/17 9:13	Tahoe City	1	Cryptomonads	Rhodomonas lacustris	3072	0.88
12/8/17 9:13	Tahoe City	1	Dinoflagellates	Gymnodinium fuscum	288	4.26
12/8/17 9:13	Tahoe City	1	Dinoflagellates	Peridinium inconspicuum	384	0.37
12/8/17 9:13	Tahoe City	1	Dinoflagellates	Peridinium (large)	288	0.35
12/8/17 9:13	Tahoe City	1	Green Algae	Ankistrodesmus spiralis	13366	1.65
12/8/17 9:13	Tahoe City	1	Green Algae	Cosmarium bioculatum	4608	2.06
12/8/17 9:13	Tahoe City	1	Green Algae	Cosmarium phaseolus	480	0.94
12/8/17 9:13	Tahoe City	1	Green Algae	Elakatothrix gelatinosa	2211	0.19
12/8/17 9:13	Tahoe City	1	Green Algae	Planktonema lauterbornii	11347	0.69
12/8/17 9:13	Tahoe City	1	Green Algae	Spondylosium planum	384	0.16
12/8/17 9:13	Tahoe City	1	Green Algae	Tetraedron minimum v. tetralobulatum	7680	0.40
12/8/17 9:13	Tahoe City	1	Green Algae	Xanthidium	96	0.04

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm ³ /m ³)
12/8/17 9:13	Tahoe City	1	Haptophyte	Chrysochromulina parva	26113	1.19
12/8/17 9:33	Mid Lake North	1	Diatoms	Achnanthes lanceolata var. elliptica	1274	0.15
12/8/17 9:33	Mid Lake North	1	Diatoms	Cyclotella bodanica	98	0.57
12/8/17 9:33	Mid Lake North	1	Diatoms	Cyclotella gordonensis	21922	1.67
12/8/17 9:33	Mid Lake North	1	Diatoms	Epithemia sorex	294	1.77
12/8/17 9:33	Mid Lake North	1	Diatoms	Fragilaria capucina	196	0.22
12/8/17 9:33	Mid Lake North	1	Diatoms	Staurosira construens	490	0.09
12/8/17 9:33	Mid Lake North	1	Diatoms	Staurosirella pinnata	784	0.11
12/8/17 9:33	Mid Lake North	1	Diatoms	Mastogloia smithii	98	0.27
12/8/17 9:33	Mid Lake North	1	Diatoms	Navicula radiosa	196	2.54
12/8/17 9:33	Mid Lake North	1	Diatoms	Nitzschia	784	13.06
12/8/17 9:33	Mid Lake North	1	Diatoms	Synedra acus	2548	11.20
12/8/17 9:33	Mid Lake North	1	Diatoms	Synedra ulna	98	0.98
12/8/17 9:33	Mid Lake North	1	Diatoms	Tabellaria fenestrata	196	0.37
12/8/17 9:33	Mid Lake North	1	Chrysophytes	Dinobryon sociale v. americanum	98	0.02
12/8/17 9:33	Mid Lake North	1	Chrysophytes	Kephriion rubri-claustri	1565	0.10
12/8/17 9:33	Mid Lake North	1	Cryptomonads	Cryptomonas	9508	18.37
12/8/17 9:33	Mid Lake North	1	Cryptomonads	Rhodomonas lacustris	10961	3.15
12/8/17 9:33	Mid Lake North	1	Dinoflagellates	Gymnodinium fuscum	784	11.59
12/8/17 9:33	Mid Lake North	1	Dinoflagellates	Peridinium inconspicuum	1372	1.33
12/8/17 9:33	Mid Lake North	1	Dinoflagellates	Peridinium (large)	882	1.08
12/8/17 9:33	Mid Lake North	1	Green Algae	Ankistrodesmus spiralis	14606	1.80
12/8/17 9:33	Mid Lake North	1	Green Algae	Cosmarium bioculatum	18791	8.41
12/8/17 9:33	Mid Lake North	1	Green Algae	Cosmarium phaseolus	490	0.95
12/8/17 9:33	Mid Lake North	1	Green Algae	Elakatothrix gelatinosa	1666	0.14
12/8/17 9:33	Mid Lake North	1	Green Algae	Planktonema lauterbornii	10194	0.62
12/8/17 9:33	Mid Lake North	1	Green Algae	Spondylosium planum	490	0.21
12/8/17 9:33	Mid Lake North	1	Green Algae	Tetraedron minimum v. tetralobulatum	7829	0.41
12/8/17 9:33	Mid Lake North	1	Green Algae	Xanthidium	98	0.04
12/8/17 9:33	Mid Lake North	1	Haptophyte	Chrysochromulina parva	34450	1.57
12/8/17 9:40	Kings Beach	1	Diatoms	Achnanthes lanceolata var. elliptica	631	0.07
12/8/17 9:40	Kings Beach	1	Diatoms	Cyclotella bodanica	360	2.10
12/8/17 9:40	Kings Beach	1	Diatoms	Cyclotella gordonensis	12960	1.08
12/8/17 9:40	Kings Beach	1	Diatoms	Cymbella	90	0.11
12/8/17 9:40	Kings Beach	1	Diatoms	Epithemia sorex	180	1.08
12/8/17 9:40	Kings Beach	1	Diatoms	Epithemia zebra	90	2.49

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
12/8/17 9:40	Kings Beach	1	Diatoms	Staurosira construens	2253	0.43
12/8/17 9:40	Kings Beach	1	Diatoms	Gomphonema subtile	90	0.07
12/8/17 9:40	Kings Beach	1	Diatoms	Navicula radiosa	90	1.17
12/8/17 9:40	Kings Beach	1	Diatoms	Nitzschia	721	12.01
12/8/17 9:40	Kings Beach	1	Diatoms	Synedra acus	2073	9.11
12/8/17 9:40	Kings Beach	1	Diatoms	Synedra ulna	90	0.90
12/8/17 9:40	Kings Beach	1	Chrysophytes	Dinobryon sociale v. americanum	90	0.02
12/8/17 9:40	Kings Beach	1	Chrysophytes	Epipyxis	2880	0.12
12/8/17 9:40	Kings Beach	1	Chrysophytes	Kephyrion cupliforme	4320	0.36
12/8/17 9:40	Kings Beach	1	Chrysophytes	Kephyrion rubri-claustri	1440	0.09
12/8/17 9:40	Kings Beach	1	Cryptomonads	Cryptomonas	3065	5.92
12/8/17 9:40	Kings Beach	1	Cryptomonads	Rhodomonas lacustris	17281	4.96
12/8/17 9:40	Kings Beach	1	Dinoflagellates	Gymnodinium fuscum	450	6.65
12/8/17 9:40	Kings Beach	1	Dinoflagellates	Peridinium inconspicuum	1352	1.31
12/8/17 9:40	Kings Beach	1	Dinoflagellates	Peridinium (large)	540	0.66
12/8/17 9:40	Kings Beach	1	Green Algae	Ankistrodesmus spiralis	18480	2.28
12/8/17 9:40	Kings Beach	1	Green Algae	Cosmarium bioculatum	5760	2.58
12/8/17 9:40	Kings Beach	1	Green Algae	Cosmarium phaseolus	360	0.70
12/8/17 9:40	Kings Beach	1	Green Algae	Elakatothrix gelatinosa	2073	0.17
12/8/17 9:40	Kings Beach	1	Green Algae	Oocystis parva	2880	0.28
12/8/17 9:40	Kings Beach	1	Green Algae	Planktonema lauterbornii	10187	0.62
12/8/17 9:40	Kings Beach	1	Green Algae	Tetraedron minimum v.tetralobulatum	12960	0.68
12/8/17 9:40	Kings Beach	1	Green Algae	Xanthidium	180	0.08
12/8/17 9:40	Kings Beach	1	Cyanophytes	Anabaena variabilis	1081	0.12
12/8/17 9:40	Kings Beach	1	Haptophyte	Chrysochromulina parva	23041	1.05
12/8/17 10:15	Crystal Bay	1	Diatoms	Achnanthes lanceolata var. elliptica	708	0.08
12/8/17 10:15	Crystal Bay	1	Diatoms	Cyclotella bodanica	531	3.09
12/8/17 10:15	Crystal Bay	1	Diatoms	Cyclotella gordonensis	19806	1.51
12/8/17 10:15	Crystal Bay	1	Diatoms	Staurosira construens	797	0.15
12/8/17 10:15	Crystal Bay	1	Diatoms	Mastogloia smithii	177	0.48
12/8/17 10:15	Crystal Bay	1	Diatoms	Nitzschia	708	11.79
12/8/17 10:15	Crystal Bay	1	Diatoms	Rhopalodia gibba	177	4.37
12/8/17 10:15	Crystal Bay	1	Diatoms	Synedra acus	4251	18.68
12/8/17 10:15	Crystal Bay	1	Chrysophytes	Epipyxis	177	0.01
12/8/17 10:15	Crystal Bay	1	Chrysophytes	Kephyrion cupliforme	8488	0.71
12/8/17 10:15	Crystal Bay	1	Cryptomonads	Cryptomonas	3542	6.84

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
12/8/17 10:15	Crystal Bay	1	Cryptomonads	Rhodomonas lacustris	19807	5.69
12/8/17 10:15	Crystal Bay	1	Dinoflagellates	Gymnodinium fuscum	531	7.85
12/8/17 10:15	Crystal Bay	1	Dinoflagellates	Peridinium inconspicuum	1239	1.20
12/8/17 10:15	Crystal Bay	1	Dinoflagellates	Peridinium (large)	442	0.54
12/8/17 10:15	Crystal Bay	1	Green Algae	Ankistrodesmus spiralis	19131	2.36
12/8/17 10:15	Crystal Bay	1	Green Algae	Cosmarium bioculatum	5659	2.53
12/8/17 10:15	Crystal Bay	1	Green Algae	Cosmarium phaseolus	177	0.34
12/8/17 10:15	Crystal Bay	1	Green Algae	Elakatothrix gelatinosa	1328	0.11
12/8/17 10:15	Crystal Bay	1	Green Algae	Oocystis parva	7074	0.69
12/8/17 10:15	Crystal Bay	1	Green Algae	Planktonema lauterbornii	18599	1.13
12/8/17 10:15	Crystal Bay	1	Green Algae	Tetraedron minimum v.tetralobulatum	21222	1.11
12/8/17 10:15	Crystal Bay	1	Green Algae	Xanthidium	265	0.11
12/8/17 10:15	Crystal Bay	1	Haptophyte	Chrysochromulina parva	32541	1.49
12/8/17 10:50	Glenbrook	1	Diatoms	Achnanthes lanceolata var. elliptica	467	0.06
12/8/17 10:50	Glenbrook	1	Diatoms	Cyclotella bodanica	186	1.08
12/8/17 10:50	Glenbrook	1	Diatoms	Cyclotella comensis	5973	2.56
12/8/17 10:50	Glenbrook	1	Diatoms	Cyclotella gordonensis	13440	1.67
12/8/17 10:50	Glenbrook	1	Diatoms	Epithemia sorex	186	1.12
12/8/17 10:50	Glenbrook	1	Diatoms	Fragilaria capucina	186	0.21
12/8/17 10:50	Glenbrook	1	Diatoms	Staurosira construens	2150	0.41
12/8/17 10:50	Glenbrook	1	Diatoms	Nitzschia	280	4.66
12/8/17 10:50	Glenbrook	1	Diatoms	Synedra acus	3459	15.20
12/8/17 10:50	Glenbrook	1	Chrysophytes	Dinobryon sociale v. americanum	93	0.02
12/8/17 10:50	Glenbrook	1	Chrysophytes	Epipyxis	2986	0.13
12/8/17 10:50	Glenbrook	1	Chrysophytes	Flagellates (<5µm)	4480	0.04
12/8/17 10:50	Glenbrook	1	Chrysophytes	Kephyrion cupliforme	8960	0.75
12/8/17 10:50	Glenbrook	1	Cryptomonads	Cryptomonas	5702	11.01
12/8/17 10:50	Glenbrook	1	Cryptomonads	Rhodomonas lacustris	11947	3.43
12/8/17 10:50	Glenbrook	1	Dinoflagellates	Gymnodinium fuscum	467	6.90
12/8/17 10:50	Glenbrook	1	Dinoflagellates	Peridinium inconspicuum	747	0.72
12/8/17 10:50	Glenbrook	1	Dinoflagellates	Peridinium (large)	280	0.34
12/8/17 10:50	Glenbrook	1	Green Algae	Ankistrodesmus spiralis	9068	1.12
12/8/17 10:50	Glenbrook	1	Green Algae	Cosmarium bioculatum	2986	1.34
12/8/17 10:50	Glenbrook	1	Green Algae	Cosmarium phaseolus	280	0.55
12/8/17 10:50	Glenbrook	1	Green Algae	Cosmarium undulatum	93	2.91
12/8/17 10:50	Glenbrook	1	Green Algae	Elakatothrix gelatinosa	747	0.06

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
12/8/17 10:50	Glenbrook	1	Green Algae	Gloeocystis	1121	0.08
12/8/17 10:50	Glenbrook	1	Green Algae	Oocystis parva	4480	0.44
12/8/17 10:50	Glenbrook	1	Green Algae	Planktonema lauterbornii	10003	0.61
12/8/17 10:50	Glenbrook	1	Green Algae	Tetraedron minimum v.tetralobulatum	16427	0.86
12/8/17 10:50	Glenbrook	1	Cyanophytes	Phormidium	8960	0.63
12/8/17 10:50	Glenbrook	1	Haptophyte	Chrysochromulina parva	46296	2.12
12/8/17 11:30	Mid-Lake South	1	Diatoms	Achnanthes lanceolata var. elliptica	381	0.04
12/8/17 11:30	Mid-Lake South	1	Diatoms	Cyclotella bodanica	95	0.55
12/8/17 11:30	Mid-Lake South	1	Diatoms	Cyclotella comensis	1521	0.65
12/8/17 11:30	Mid-Lake South	1	Diatoms	Cyclotella gordonensis	7608	0.48
12/8/17 11:30	Mid-Lake South	1	Diatoms	Cymbella	95	0.12
12/8/17 11:30	Mid-Lake South	1	Diatoms	Staurosira construens	1428	0.27
12/8/17 11:30	Mid-Lake South	1	Diatoms	Staurosirella pinnata	3043	0.44
12/8/17 11:30	Mid-Lake South	1	Diatoms	Aulacoseira granulata var.angustissima f.	1333	2.48
12/8/17 11:30	Mid-Lake South	1	Diatoms	Nitzschia acicularis	95	0.02
12/8/17 11:30	Mid-Lake South	1	Diatoms	Nitzschia	285	4.75
12/8/17 11:30	Mid-Lake South	1	Diatoms	Synedra acus	4286	18.83
12/8/17 11:30	Mid-Lake South	1	Chrysophytes	Flagellates (5-10um)	1521	0.21
12/8/17 11:30	Mid-Lake South	1	Chrysophytes	Kephyrion cupliforme	9129	0.76
12/8/17 11:30	Mid-Lake South	1	Cryptomonads	Cryptomonas	6286	12.14
12/8/17 11:30	Mid-Lake South	1	Cryptomonads	Rhodomonas lacustris	18259	5.24
12/8/17 11:30	Mid-Lake South	1	Dinoflagellates	Gymnodinium fuscum	1333	19.70
12/8/17 11:30	Mid-Lake South	1	Dinoflagellates	Peridinium inconspicuum	1047	1.02
12/8/17 11:30	Mid-Lake South	1	Dinoflagellates	Peridinium (large)	666	0.81
12/8/17 11:30	Mid-Lake South	1	Green Algae	Ankistrodesmus spiralis	10096	1.25
12/8/17 11:30	Mid-Lake South	1	Green Algae	Cosmarium bioculatum	10651	4.77
12/8/17 11:30	Mid-Lake South	1	Green Algae	Cosmarium phaseolus	95	0.19
12/8/17 11:30	Mid-Lake South	1	Green Algae	Elakatothrix gelatinosa	1238	0.10
12/8/17 11:30	Mid-Lake South	1	Green Algae	Oocystis parva	7608	0.74
12/8/17 11:30	Mid-Lake South	1	Green Algae	Scenedesmus quadricauda	762	0.22
12/8/17 11:30	Mid-Lake South	1	Green Algae	Tetraspora lemmernannii	1143	0.07
12/8/17 11:30	Mid-Lake South	1	Green Algae	Tetraedron minimum v.tetralobulatum	10651	0.56
12/8/17 11:30	Mid-Lake South	1	Green Algae	Xanthidium	95	0.04
12/8/17 11:30	Mid-Lake South	1	Haptophyte	Chrysochromulina parva	36518	1.67
12/8/17 11:44	Timber Cove	1	Diatoms	Achnanthes lanceolata var. elliptica	769	0.09
12/8/17 11:44	Timber Cove	1	Diatoms	Asterionella formosa	96	0.05

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
12/8/17 11:44	Timber Cove	1	Diatoms	Cyclotella bodanica	384	2.24
12/8/17 11:44	Timber Cove	1	Diatoms	Cyclotella gordonensis	27649	2.87
12/8/17 11:44	Timber Cove	1	Diatoms	Cymbella	96	0.12
12/8/17 11:44	Timber Cove	1	Diatoms	Epithemia sorex	192	1.15
12/8/17 11:44	Timber Cove	1	Diatoms	Staurosira construens	1057	0.20
12/8/17 11:44	Timber Cove	1	Diatoms	Mastogloia smithii	96	0.26
12/8/17 11:44	Timber Cove	1	Diatoms	Navicula pupula	96	0.17
12/8/17 11:44	Timber Cove	1	Diatoms	Nitzschia acicularis	288	0.06
12/8/17 11:44	Timber Cove	1	Diatoms	Nitzschia	1250	20.82
12/8/17 11:44	Timber Cove	1	Diatoms	Synedra acus	3942	17.32
12/8/17 11:44	Timber Cove	1	Diatoms	Synedra ulna	96	0.96
12/8/17 11:44	Timber Cove	1	Chrysophytes	Dinobryon sociale v. americanum	96	0.02
12/8/17 11:44	Timber Cove	1	Chrysophytes	Flagellates (<5µm)	6144	0.05
12/8/17 11:44	Timber Cove	1	Chrysophytes	Kephyrion cupliforme	1536	0.13
12/8/17 11:44	Timber Cove	1	Cryptomonads	Cryptomonas	7500	14.49
12/8/17 11:44	Timber Cove	1	Cryptomonads	Rhodomonas lacustris	12288	3.53
12/8/17 11:44	Timber Cove	1	Dinoflagellates	Gymnodinium fuscum	576	8.51
12/8/17 11:44	Timber Cove	1	Dinoflagellates	Peridinium inconspicuum	673	0.65
12/8/17 11:44	Timber Cove	1	Dinoflagellates	Peridinium (large)	865	1.06
12/8/17 11:44	Timber Cove	1	Green Algae	Ankistrodesmus spiralis	11058	1.37
12/8/17 11:44	Timber Cove	1	Green Algae	Cosmarium bioculatum	7680	3.44
12/8/17 11:44	Timber Cove	1	Green Algae	Cosmarium phaseolus	1346	2.62
12/8/17 11:44	Timber Cove	1	Green Algae	Elakatothrix gelatinosa	3269	0.27
12/8/17 11:44	Timber Cove	1	Green Algae	Oocystis parva	6144	0.60
12/8/17 11:44	Timber Cove	1	Green Algae	Planktonema lauterbornii	10000	0.61
12/8/17 11:44	Timber Cove	1	Green Algae	Tetraedron minimum v.tetralobulatum	19969	1.05
12/8/17 11:44	Timber Cove	1	Green Algae	Xanthidium	480	0.20
12/8/17 11:44	Timber Cove	1	Haptophyte	Chrysochromulina parva	30721	1.40
12/8/17 12:00	Tahoe Keys	1	Diatoms	Achnanthes lanceolata var. elliptica	961	0.11
12/8/17 12:00	Tahoe Keys	1	Diatoms	Asterionella formosa	96	0.05
12/8/17 12:00	Tahoe Keys	1	Diatoms	Cocconeis placentula	96	0.11
12/8/17 12:00	Tahoe Keys	1	Diatoms	Cyclotella bodanica	288	1.68
12/8/17 12:00	Tahoe Keys	1	Diatoms	Cyclotella gordonensis	16896	1.91
12/8/17 12:00	Tahoe Keys	1	Diatoms	Cymbella	192	0.24
12/8/17 12:00	Tahoe Keys	1	Diatoms	Diatoma vulgare	96	0.43
12/8/17 12:00	Tahoe Keys	1	Diatoms	Epithemia sorex	96	0.58

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
12/8/17 12:00	Tahoe Keys	1	Diatoms	Epithemia zebra	96	2.66
12/8/17 12:00	Tahoe Keys	1	Diatoms	Fragilaria capucina	288	0.32
12/8/17 12:00	Tahoe Keys	1	Diatoms	Stausosira construens	384	0.07
12/8/17 12:00	Tahoe Keys	1	Diatoms	Fragilaria crotonensis	384	0.45
12/8/17 12:00	Tahoe Keys	1	Diatoms	Stausosirella pinnata	192	0.03
12/8/17 12:00	Tahoe Keys	1	Diatoms	Gomphonema subtile	384	0.31
12/8/17 12:00	Tahoe Keys	1	Diatoms	Aulacoseira granulata var.angustissima f.	576	1.07
12/8/17 12:00	Tahoe Keys	1	Diatoms	Navicula pupula	96	0.17
12/8/17 12:00	Tahoe Keys	1	Diatoms	Navicula tuscula	192	1.58
12/8/17 12:00	Tahoe Keys	1	Diatoms	Nitzschia acicularis	576	0.13
12/8/17 12:00	Tahoe Keys	1	Diatoms	Nitzschia	1153	19.20
12/8/17 12:00	Tahoe Keys	1	Diatoms	Synedra acus	1730	7.60
12/8/17 12:00	Tahoe Keys	1	Chrysophytes	Dinobryon sociale v. americanum	1346	0.25
12/8/17 12:00	Tahoe Keys	1	Chrysophytes	Flagellates (<5µm)	3072	0.02
12/8/17 12:00	Tahoe Keys	1	Chrysophytes	Kephron rubri-claustri	1536	0.10
12/8/17 12:00	Tahoe Keys	1	Cryptomonads	Cryptomonas	1730	3.34
12/8/17 12:00	Tahoe Keys	1	Cryptomonads	Rhodomonas lacustris	6144	1.76
12/8/17 12:00	Tahoe Keys	1	Dinoflagellates	Gymnodinium fuscum	288	4.26
12/8/17 12:00	Tahoe Keys	1	Dinoflagellates	Peridinium inconspicuum	480	0.47
12/8/17 12:00	Tahoe Keys	1	Dinoflagellates	Peridinium (large)	192	0.23
12/8/17 12:00	Tahoe Keys	1	Green Algae	Ankistrodesmus spiralis	10385	1.28
12/8/17 12:00	Tahoe Keys	1	Green Algae	Cosmarium phaseolus	576	1.12
12/8/17 12:00	Tahoe Keys	1	Green Algae	Elakathrix gelatinosa	1923	0.16
12/8/17 12:00	Tahoe Keys	1	Green Algae	Mougeotia	2596	23.25
12/8/17 12:00	Tahoe Keys	1	Green Algae	Oocystis parva	4608	0.45
12/8/17 12:00	Tahoe Keys	1	Green Algae	Planktonema lauterbornii	12116	0.74
12/8/17 12:00	Tahoe Keys	1	Green Algae	Tetraspora lemmernannii	1538	0.10
12/8/17 12:00	Tahoe Keys	1	Green Algae	Tetraedron minimum v.tetralobulatum	1536	0.08
12/8/17 12:00	Tahoe Keys	1	Green Algae	Xanthidium	192	0.08
12/8/17 12:00	Tahoe Keys	1	Cyanophytes	Phormidium	11539	0.81
12/8/17 12:00	Tahoe Keys	1	Haptophyte	Chrysochromulina parva	33794	1.54
12/8/17 12:15	Camp Richardson	1	Diatoms	Achnanthes lanceolata var. elliptica	490	0.06
12/8/17 12:15	Camp Richardson	1	Diatoms	Asterionella formosa	196	0.09
12/8/17 12:15	Camp Richardson	1	Diatoms	Cyclotella bodanica	392	2.28
12/8/17 12:15	Camp Richardson	1	Diatoms	Cyclotella gordonensis	29751	4.11
12/8/17 12:15	Camp Richardson	1	Diatoms	Cymbella	98	0.12

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
12/8/17 12:15	Camp Richardson	1	Diatoms	Epithemia sorex	392	2.35
12/8/17 12:15	Camp Richardson	1	Diatoms	Staurosira construens	4411	0.84
12/8/17 12:15	Camp Richardson	1	Diatoms	Mastogloia smithii	196	0.53
12/8/17 12:15	Camp Richardson	1	Diatoms	Aulacoseira granulata var.angustissima f.	1176	2.19
12/8/17 12:15	Camp Richardson	1	Diatoms	Navicula tuscula	98	0.81
12/8/17 12:15	Camp Richardson	1	Diatoms	Nitzschia	1960	32.64
12/8/17 12:15	Camp Richardson	1	Diatoms	Synedra acus	3234	14.21
12/8/17 12:15	Camp Richardson	1	Diatoms	Synedra ulna	196	1.95
12/8/17 12:15	Camp Richardson	1	Diatoms	Tabellaria fenestrata	98	0.18
12/8/17 12:15	Camp Richardson	1	Chrysophytes	Dinobryon sociale v. americanum	196	0.04
12/8/17 12:15	Camp Richardson	1	Chrysophytes	Kephyrion cupliforme	6263	0.52
12/8/17 12:15	Camp Richardson	1	Chrysophytes	Kephyrion rubri-claustri	4697	0.31
12/8/17 12:15	Camp Richardson	1	Cryptomonads	Cryptomonas	5489	10.60
12/8/17 12:15	Camp Richardson	1	Cryptomonads	Rhodomonas lacustris	18791	5.40
12/8/17 12:15	Camp Richardson	1	Dinoflagellates	Gymnodinium fuscum	784	11.59
12/8/17 12:15	Camp Richardson	1	Dinoflagellates	Peridinium inconspicuum	588	0.57
12/8/17 12:15	Camp Richardson	1	Dinoflagellates	Peridinium (large)	1764	2.16
12/8/17 12:15	Camp Richardson	1	Green Algae	Ankistrodesmus spiralis	8920	1.10
12/8/17 12:15	Camp Richardson	1	Green Algae	Cosmarium phaseolus	588	1.15
12/8/17 12:15	Camp Richardson	1	Green Algae	Elakathrix gelatinosa	980	0.08
12/8/17 12:15	Camp Richardson	1	Green Algae	Oocystis parva	4697	0.46
12/8/17 12:15	Camp Richardson	1	Green Algae	Planktonema lauterbornii	14704	0.89
12/8/17 12:15	Camp Richardson	1	Green Algae	Tetraspora lemmernannii	392	0.03
12/8/17 12:15	Camp Richardson	1	Green Algae	Tetraedron minimum v.tetralobulatum	12527	0.66
12/8/17 12:15	Camp Richardson	1	Cyanophytes	Anabaena variabilis	2548	0.29
12/8/17 12:15	Camp Richardson	1	Haptophyte	Chrysochromulina parva	34450	1.57
12/8/17 12:43	Emerald Bay	1	Diatoms	Achnanthes lanceolata var. elliptica	392	0.05
12/8/17 12:43	Emerald Bay	1	Diatoms	Asterionella formosa	490	0.24
12/8/17 12:43	Emerald Bay	1	Diatoms	Cyclotella bodanica	196	1.14
12/8/17 12:43	Emerald Bay	1	Diatoms	Cyclotella comensis	3131	1.34
12/8/17 12:43	Emerald Bay	1	Diatoms	Cyclotella gordonensis	56373	6.42
12/8/17 12:43	Emerald Bay	1	Diatoms	Fragilaria capucina	294	0.32
12/8/17 12:43	Emerald Bay	1	Diatoms	Staurosira construens	4803	0.92
12/8/17 12:43	Emerald Bay	1	Diatoms	Mastogloia smithii	98	0.27
12/8/17 12:43	Emerald Bay	1	Diatoms	Navicula pupula	98	0.17
12/8/17 12:43	Emerald Bay	1	Diatoms	Nitzschia acicularis	98	0.02

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
12/8/17 12:43	Emerald Bay	1	Diatoms	Nitzschia	6469	107.74
12/8/17 12:43	Emerald Bay	1	Diatoms	Synedra acus	13429	59.00
12/8/17 12:43	Emerald Bay	1	Diatoms	Tabellaria flocculosa	98	0.61
12/8/17 12:43	Emerald Bay	1	Chrysophytes	Dinobryon sociale v. americanum	98	0.02
12/8/17 12:43	Emerald Bay	1	Chrysophytes	Flagellates (<5µm)	6263	0.05
12/8/17 12:43	Emerald Bay	1	Chrysophytes	Kephyrion cupliforme	3131	0.26
12/8/17 12:43	Emerald Bay	1	Chrysophytes	Kephyrion rubri-claustri	3131	0.21
12/8/17 12:43	Emerald Bay	1	Cryptomonads	Cryptomonas	5783	11.17
12/8/17 12:43	Emerald Bay	1	Cryptomonads	Rhodomonas lacustris	39148	11.25
12/8/17 12:43	Emerald Bay	1	Dinoflagellates	Peridinium inconspicuum	196	0.19
12/8/17 12:43	Emerald Bay	1	Dinoflagellates	Peridinium (large)	784	0.96
12/8/17 12:43	Emerald Bay	1	Green Algae	Ankistrodesmus spiralis	2646	0.33
12/8/17 12:43	Emerald Bay	1	Green Algae	Cosmarium bioculatum	294	0.13
12/8/17 12:43	Emerald Bay	1	Green Algae	Cosmarium phaseolus	294	0.57
12/8/17 12:43	Emerald Bay	1	Green Algae	Elakatothrix gelatinosa	1568	0.13
12/8/17 12:43	Emerald Bay	1	Green Algae	Oocystis parva	7829	0.76
12/8/17 12:43	Emerald Bay	1	Green Algae	Planktosphaeria gelatinosa	3136	0.56
12/8/17 12:43	Emerald Bay	1	Green Algae	Planktonema lauterbornii	5293	0.32
12/8/17 12:43	Emerald Bay	1	Green Algae	Tetraspora lemmernannii	392	0.03
12/8/17 12:43	Emerald Bay	1	Green Algae	Tetraedron minimum v.tetralobulatum	20357	1.07
12/8/17 12:43	Emerald Bay	1	Green Algae	Xanthidium	98	0.04
12/8/17 12:43	Emerald Bay	1	Haptophyte	Chrysochromulina parva	92389	4.22
12/8/17 13:14	Rubicon Bay	1	Diatoms	Achnanthes lanceolata var. elliptica	706	0.08
12/8/17 13:14	Rubicon Bay	1	Diatoms	Cyclotella bodanica	302	1.76
12/8/17 13:14	Rubicon Bay	1	Diatoms	Cyclotella gordonensis	40321	2.83
12/8/17 13:14	Rubicon Bay	1	Diatoms	Epithemia sorex	100	0.60
12/8/17 13:14	Rubicon Bay	1	Diatoms	Staurosira construens	1817	0.35
12/8/17 13:14	Rubicon Bay	1	Diatoms	Aulacoseira granulata var.angustissima f.	201	0.37
12/8/17 13:14	Rubicon Bay	1	Diatoms	Nitzschia	807	13.44
12/8/17 13:14	Rubicon Bay	1	Diatoms	Synedra acus	3231	14.20
12/8/17 13:14	Rubicon Bay	1	Chrysophytes	Kephyrion cupliforme	4838	0.40
12/8/17 13:14	Rubicon Bay	1	Cryptomonads	Cryptomonas	8683	16.77
12/8/17 13:14	Rubicon Bay	1	Cryptomonads	Rhodomonas lacustris	30645	8.80
12/8/17 13:14	Rubicon Bay	1	Dinoflagellates	Gymnodinium fuscum	807	11.93
12/8/17 13:14	Rubicon Bay	1	Dinoflagellates	Peridinium inconspicuum	1312	1.27
12/8/17 13:14	Rubicon Bay	1	Dinoflagellates	Peridinium (large)	908	1.11

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
12/8/17 13:14	Rubicon Bay	1	Green Algae	Ankistrodesmus spiralis	9491	1.17
12/8/17 13:14	Rubicon Bay	1	Green Algae	Cosmarium bioculatum	6451	2.89
12/8/17 13:14	Rubicon Bay	1	Green Algae	Cosmarium phaseolus	1009	1.97
12/8/17 13:14	Rubicon Bay	1	Green Algae	Cosmarium undulatum	100	3.13
12/8/17 13:14	Rubicon Bay	1	Green Algae	Elakatothrix gelatinosa	2423	0.20
12/8/17 13:14	Rubicon Bay	1	Green Algae	Planktosphaeria gelatinosa	1615	0.29
12/8/17 13:14	Rubicon Bay	1	Green Algae	Planktonema lauterbornii	13226	0.80
12/8/17 13:14	Rubicon Bay	1	Green Algae	Tetraedron minimum v.tetralobulatum	12903	0.68
12/8/17 13:14	Rubicon Bay	1	Green Algae	Xanthidium	201	0.09
12/8/17 13:14	Rubicon Bay	1	Cyanophytes	Anabaena variabilis	3735	0.42
12/8/17 13:14	Rubicon Bay	1	Haptophyte	Chrysochromulina parva	22580	1.03
12/8/17 13:44	Sunnyside	1	Diatoms	Achnanthes lanceolata var. elliptica	672	0.08
12/8/17 13:44	Sunnyside	1	Diatoms	Cyclotella bodanica	192	1.12
12/8/17 13:44	Sunnyside	1	Diatoms	Cyclotella gordonensis	23041	2.89
12/8/17 13:44	Sunnyside	1	Diatoms	Epithemia sorex	288	1.73
12/8/17 13:44	Sunnyside	1	Diatoms	Fragilaria capucina	384	0.42
12/8/17 13:44	Sunnyside	1	Diatoms	Staurosira construens	3942	0.75
12/8/17 13:44	Sunnyside	1	Diatoms	Mastogloia smithii	96	0.26
12/8/17 13:44	Sunnyside	1	Diatoms	Navicula radiosa	96	1.25
12/8/17 13:44	Sunnyside	1	Diatoms	Navicula tuscula	96	0.79
12/8/17 13:44	Sunnyside	1	Diatoms	Nitzschia	480	7.99
12/8/17 13:44	Sunnyside	1	Diatoms	Synedra acus	3173	13.94
12/8/17 13:44	Sunnyside	1	Diatoms	Synedra ulna	96	0.96
12/8/17 13:44	Sunnyside	1	Chrysophytes	Dinobryon sociale v. americanum	288	0.05
12/8/17 13:44	Sunnyside	1	Chrysophytes	Flagellates (<5µm)	6144	0.05
12/8/17 13:44	Sunnyside	1	Chrysophytes	Kephyrion cupliforme	7680	0.64
12/8/17 13:44	Sunnyside	1	Cryptomonads	Cryptomonas	5769	11.14
12/8/17 13:44	Sunnyside	1	Cryptomonads	Rhodomonas lacustris	18433	5.29
12/8/17 13:44	Sunnyside	1	Dinoflagellates	Gymnodinium fuscum	480	7.09
12/8/17 13:44	Sunnyside	1	Dinoflagellates	Peridinium inconspicuum	673	0.65
12/8/17 13:44	Sunnyside	1	Dinoflagellates	Peridinium (large)	1057	1.29
12/8/17 13:44	Sunnyside	1	Green Algae	Ankistrodesmus spiralis	13558	1.67
12/8/17 13:44	Sunnyside	1	Green Algae	Cosmarium bioculatum	9216	4.12
12/8/17 13:44	Sunnyside	1	Green Algae	Cosmarium phaseolus	961	1.87
12/8/17 13:44	Sunnyside	1	Green Algae	Elakatothrix gelatinosa	1057	0.09
12/8/17 13:44	Sunnyside	1	Green Algae	Mougeotia	192	1.72

Sample Date	Station	Depth	Group	Species Name	Total Abundance (units/l)	Total Biovolume (mm³/m³)
12/8/17 13:44	Sunnyside	1	Green Algae	Oocystis parva	6144	0.60
12/8/17 13:44	Sunnyside	1	Green Algae	Planktosphaeria gelatinosa	1538	0.28
12/8/17 13:44	Sunnyside	1	Green Algae	Planktonema lauterbornii	16251	0.99
12/8/17 13:44	Sunnyside	1	Green Algae	Scenedesmus quadricauda	384	0.11
12/8/17 13:44	Sunnyside	1	Green Algae	Tetraspora lemmernannii	1923	0.12
12/8/17 13:44	Sunnyside	1	Green Algae	Tetraedron minimum v.tetralobulatum	24577	1.29
12/8/17 13:44	Sunnyside	1	Green Algae	Xanthidium	288	0.12
12/8/17 13:44	Sunnyside	1	Haptophyte	Chrysochromulina parva	32258	1.47