



Big Bear Lake Lake Management

2012 Lake Operations Summary

January 2013

“The mission of the Big Bear Municipal Water District is to stabilize the level of the Lake for recreation and wildlife”

Big Bear Municipal Water District

2012 Lake Operations Summary

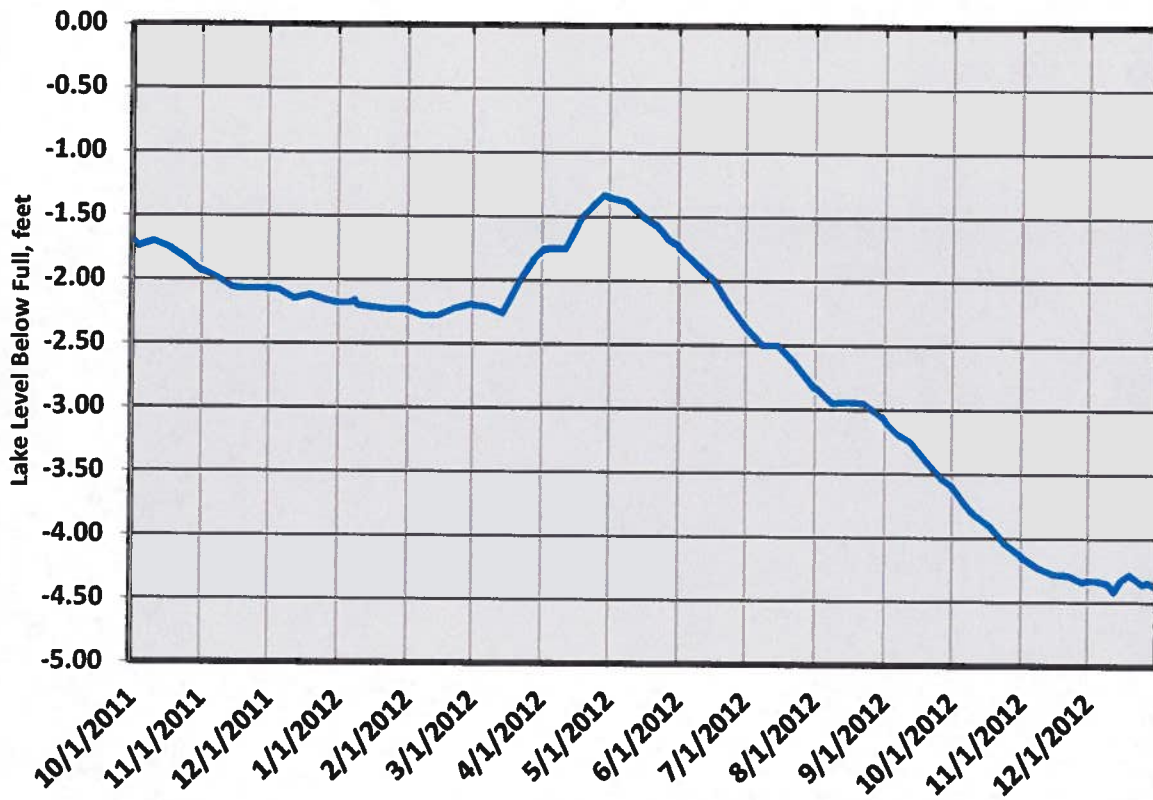
“The mission of the Big Bear Municipal Water District is to stabilize the level of the Lake for recreation and wildlife”

Big Bear Lake, Lake Management operations, in support of the Districts mission, consists of a multitude of management activities. This document serves as a summary of three broad activities; lake level stabilization, limnological monitoring, and invasive species management.

Lake Level Stabilization

The Lake began the water year, October 1, 2011 through September 30 2012, at a level 1.70 feet below full (Figure 1). Spring snow melt raised the Lake to its highest level 1.33 feet below full on April 28, 2012. The Lake level ended the year at 3.59 feet below full. This is roughly one foot higher than it otherwise would have been as a result of a temporary agreement (2012 MOU) between the Big Bear MWD and its in-lieu water provider San Bernardino Valley Municipal Water District (Valley District). The MOU allows Valley District temporary Lake storage as insurance for a summer 2013 construction project. According to the Big Bear Watermaster Valley District has 2863 acre-feet of water in Lake storage as of December 12, 2012. The District paid Valley District \$1,195,279 this year in accordance with the 1996 in-lieu agreement to help stabilize the level of Big Bear Lake. Historical lake levels can be viewed on the District web page.

Figure 1 - WY 2011-12 Lake Level Below Full



Limnological Monitoring

District Staff measure the limnological properties of the Lake weekly during the boating season at 5 monitoring stations. Measurements of Lake temperature, dissolved oxygen content and water clarity using a Secchi Disk are collected. The charts below (Figures 2, 3, and 4) show surface, mid depth and bottom water temperature and dissolved oxygen content for each of the five Lake monitoring stations (1=Boom Line, 2=Papoose Bay, 3=West Ramp, 4=Observatory and 5=Juniper Point). Weekly limnology monitoring results are attached at the back of this report.

A review of Lake bottom dissolved oxygen concentration indicates unusually high values throughout the year. No consistent and Lake wide oxycline developed during the water year. That might be the reason no algae blooms were observed as water temperatures warmed late in the year.

Surface water temperatures peaked in August and were mostly uniform in the very low 70's to high 60's at both the west and east ends of the Lake.

Figure 2 - 2012 Surface Temp/DO

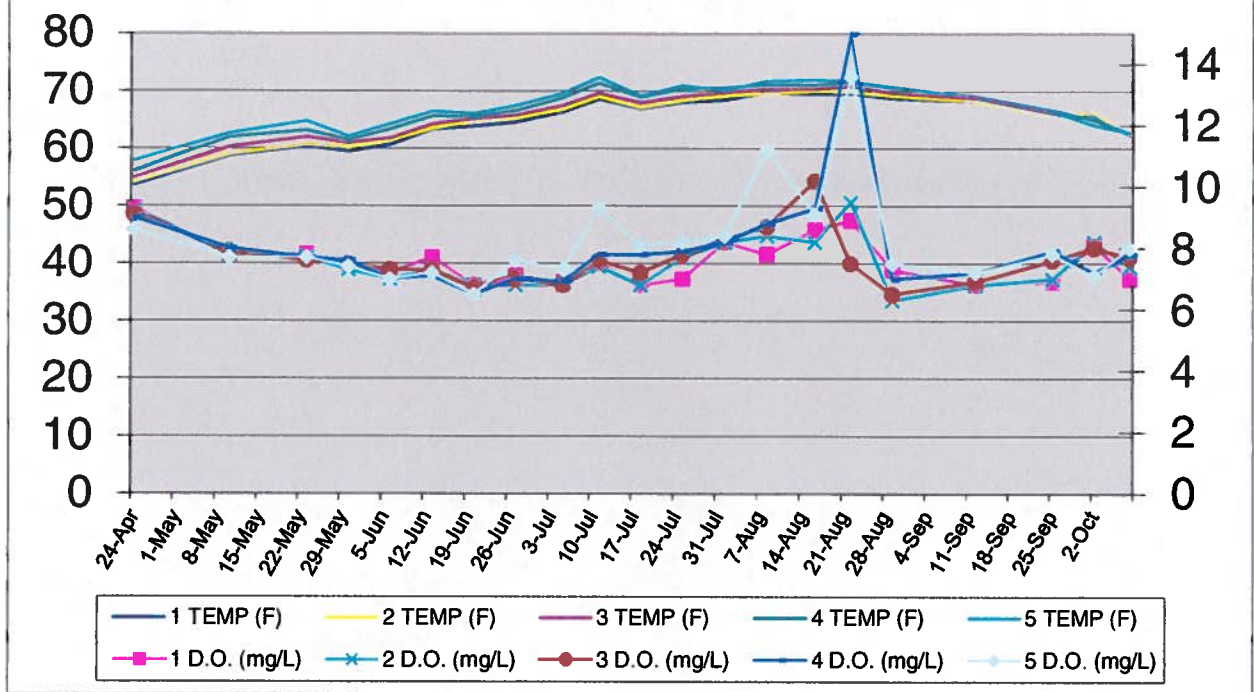


Figure 3 - 2012 Mid-depth Temp/DO

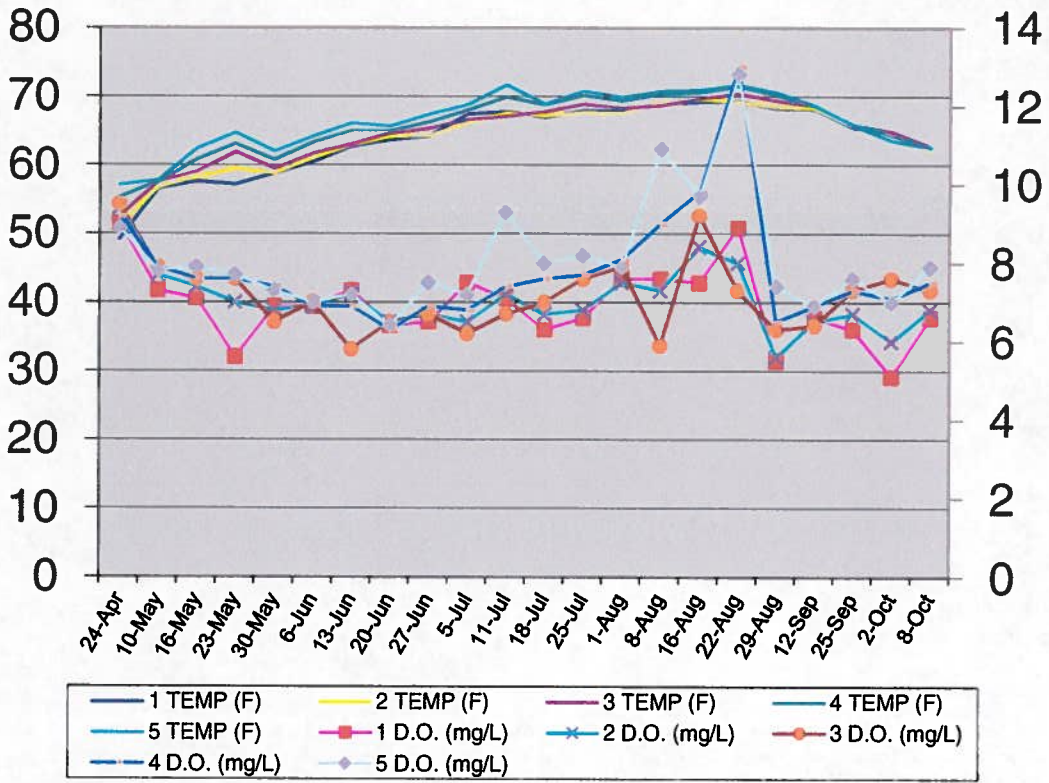
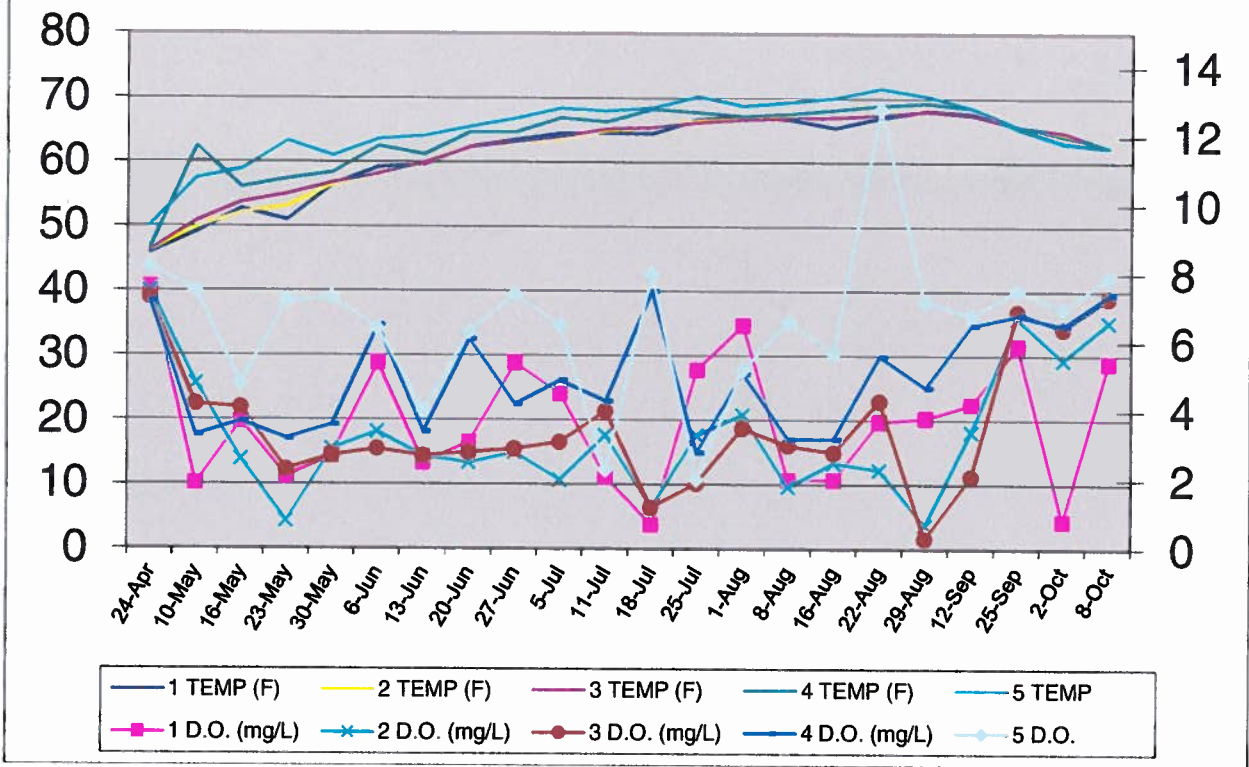


Figure 4 - 2012 Bottom Temp/DO



Secchi readings vary widely year to year over the spring and summer months when the Lake is stratified. In 2011-12 Secchi depths maxed at 12-13 feet in mid-July. By late September water clarity declined to about 6 feet. Figures 5, 6, 7, 8, and 9 are charts showing average monthly Secchi water clarity results from 2004 through 2012.

Figure 5 - Secchi Monthly Average 2004-2012 - Boom-line

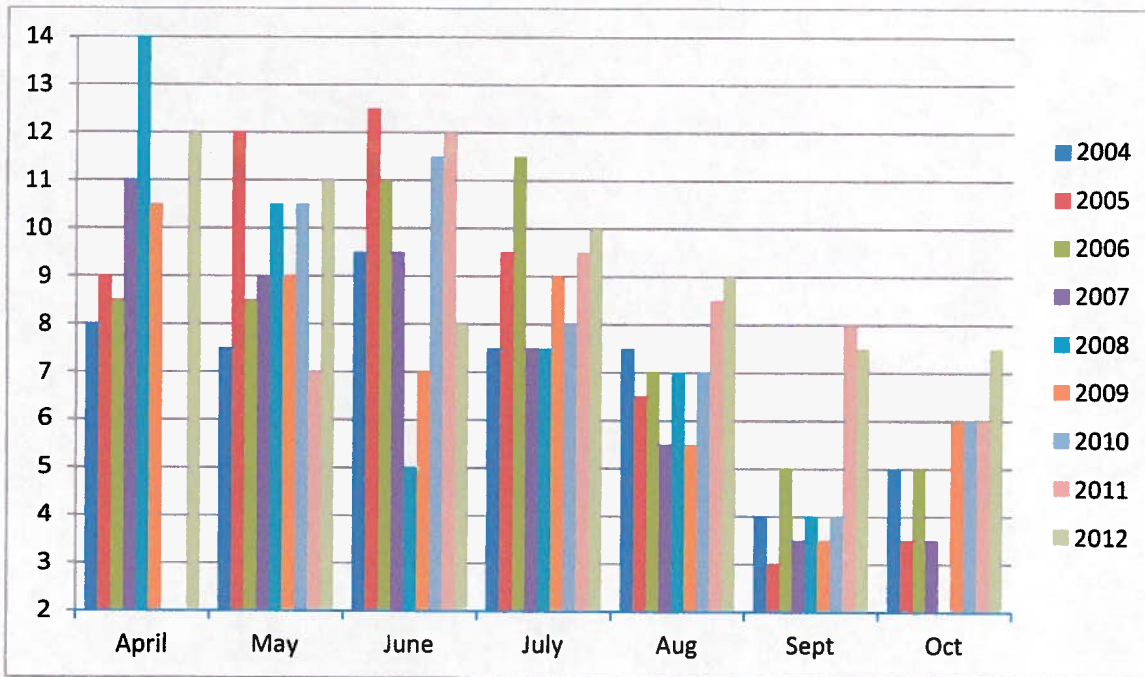


Figure 6 - Secchi Monthly Average 2004-2012 – Papoose Bay

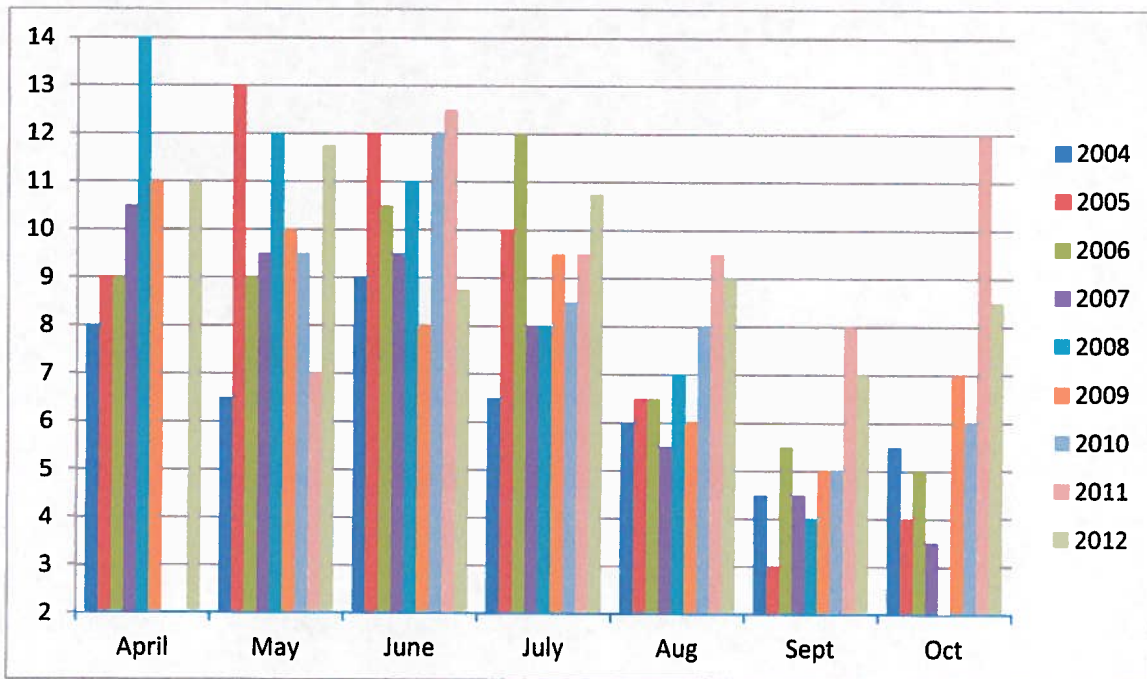


Figure 7 - Secchi Monthly Average 2004-2012 – West Ramp

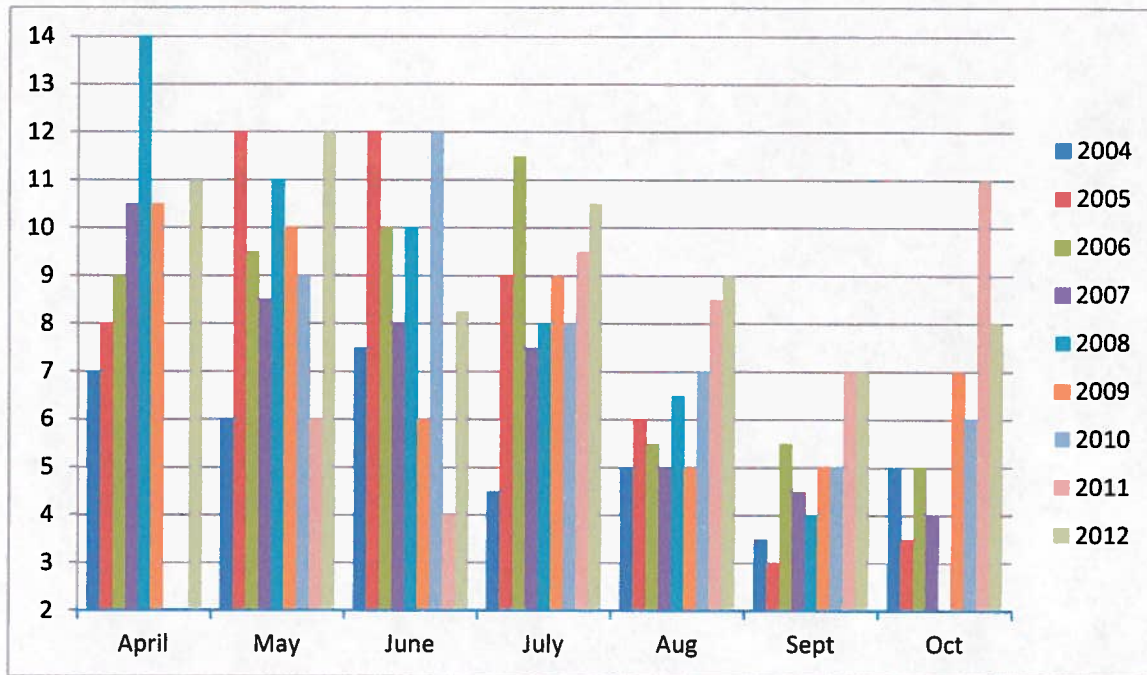


Figure 8 - Secchi Monthly Average 2004-2012 – Observatory

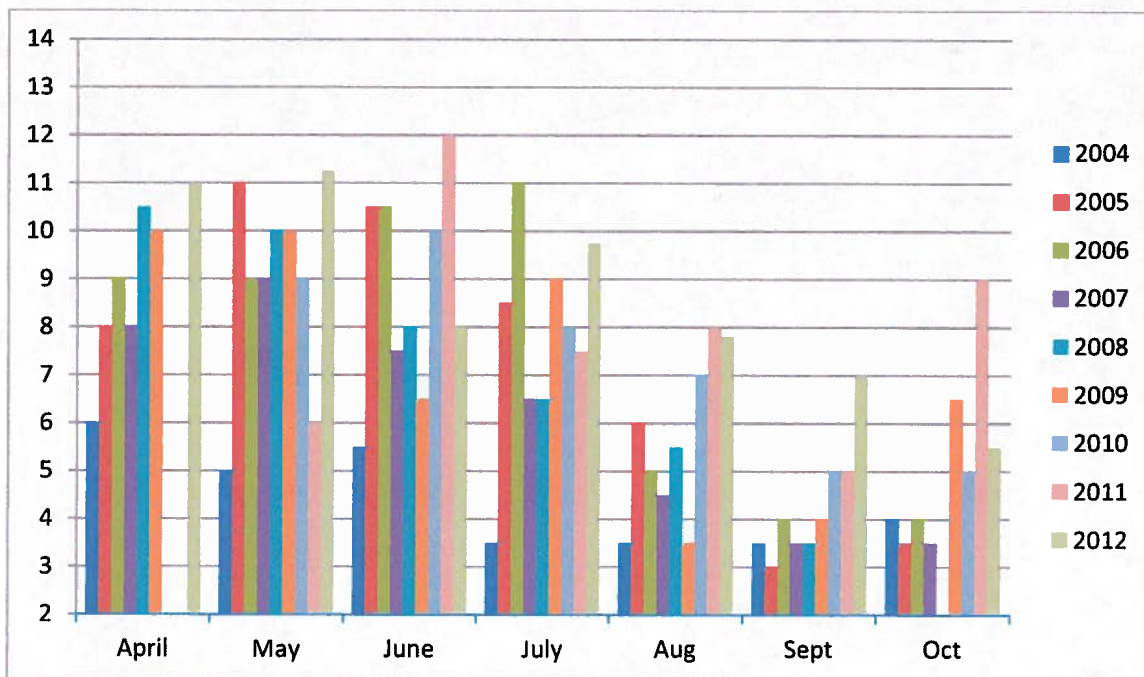
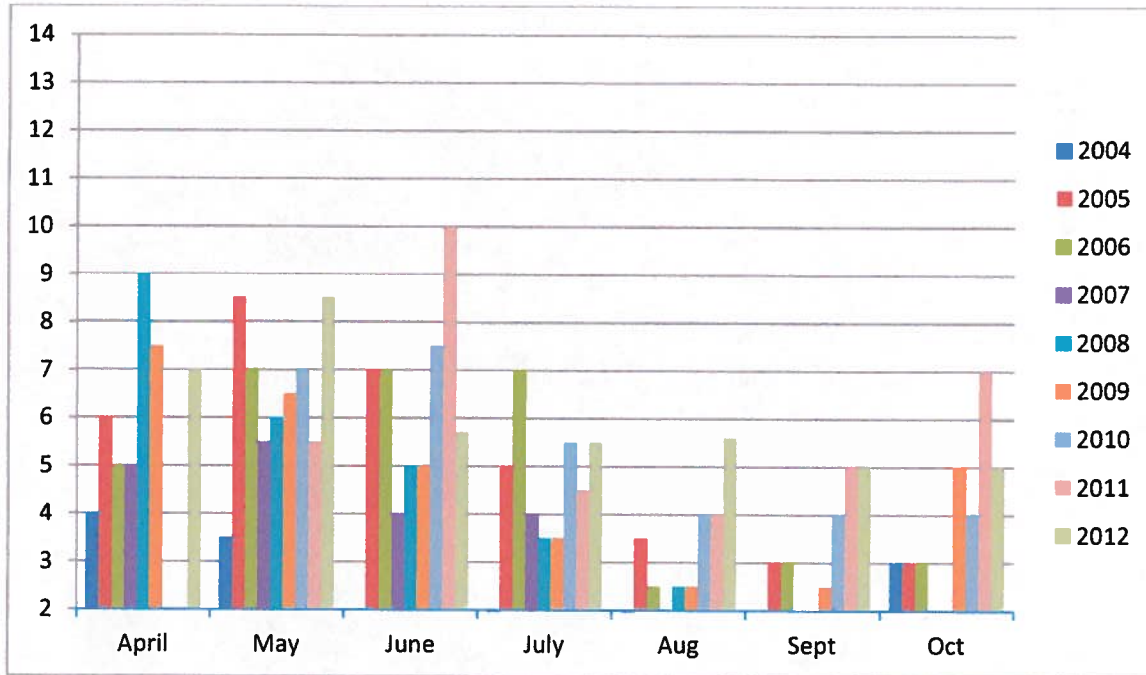


Figure 9 - Secchi Monthly Average 2004-2012 – Juniper Point



Unlike most previous years the Lake did not stratify in 2012. The Lake maintained near uniform water column temperature throughout the season. Typically as the Lake surface warms the Lake stratifies with cold, dense oxygen depleted water forming a layer below the relatively warmer, less dense, oxygenated water above. Later in the year surface and bottom water temperatures typically equilibrate and the waters mix bringing oxygen depleted and nutrient laden water up into the water column to spur algae growth. Water clarity drops dramatically and water column oxygen is also diluted when this occurs. Table 1 lists the dates that the Lake has mixed. Mixing typically occurs in late August or early September.

Table 1 – Lake Mixing History

Year	Date Lake Mixed
2012	No mixing, Lake did not stratify
2011	September 6 and June 7
2010	September 3
2009	June 12 and August 12
2008	August 19
2007	August 20
2006	August 28
2005	September 6
2004	No mixing, Lake did not stratify

The District installed a Lake aeration system in the summer of 2004. The decision to purchase and install the system was the result of low lake levels, warm water temperature, high concentrations of algae and low dissolved oxygen content when the Lake is stratified. High Lake water temperatures and low dissolved oxygen concentrations stressed trout species, sometimes resulting in fish die off in large numbers. The table below provides a qualitative summary of fish die off prior and subsequent to the installation of the aeration system.

Table 2 – Big Bear Lake Fish Die Off History

Year	Qualitative Die Off of Trout	Comments
1996	Minor	0-100 per week
1997	Minor	0-100 per week
1998	Minor	0-100 per week
1999	Moderate	100-200 per week
2000	Moderate	100-200 per week
2001	Moderate	100-200 per week
2002	Significant	200-1000 per week
2003	Very Significant	1000-2000 per week
2004	Very Significant	1000-2000 per week
2005	Insignificant	
2006	Insignificant	
2007	Insignificant	
2008	Insignificant	
2009	Insignificant	
2010	Insignificant	
2011	Insignificant	
2012	Insignificant	

The system is a stationary floating 25 horse power pump located between the boom line and the dam that draws Lake water and discharges it into the air at the rate of 8600 gallons per minute. The water cools and is oxygenated as it falls through the air before returning to the Lake. The result is an approximate 40 acre oxygenated, cooler water refuge for trout fish species. Although the system typically operates during the cooler night and early morning hours, under extreme problematic conditions it is run 24 hours a day. Since installation and operation of the aeration system no significant fish die offs have occurred.

Invasive Species Management

The Invasive Species Management program can be broken down into 3 major activities; aquatic plant control, carp removal and quagga mussel prevention program.

Aquatic Plant Control

Activities associated with aquatic plant control have two components. Milfoil specific herbicides are used to treat areas infested with Eurasian Water Milfoil. Native aquatic plant species are typically controlled mechanically using a weed harvester. Cuttings are delivered to a composting facility operated by the City of Big Bear Lake. Harvesting operations are used to maintain navigation channels and boat dock lake access.

The District has made considerable progress in reducing the population of milfoil plants in the Lake compared to the baseline year 2000 when more than 1000 acres of the lake were infested. Figure 10 is a chart summarizing acres of Milfoil mapped each year. Figure 11 is a map depicting the geographic distribution of milfoil covering 175 acres in 2012.

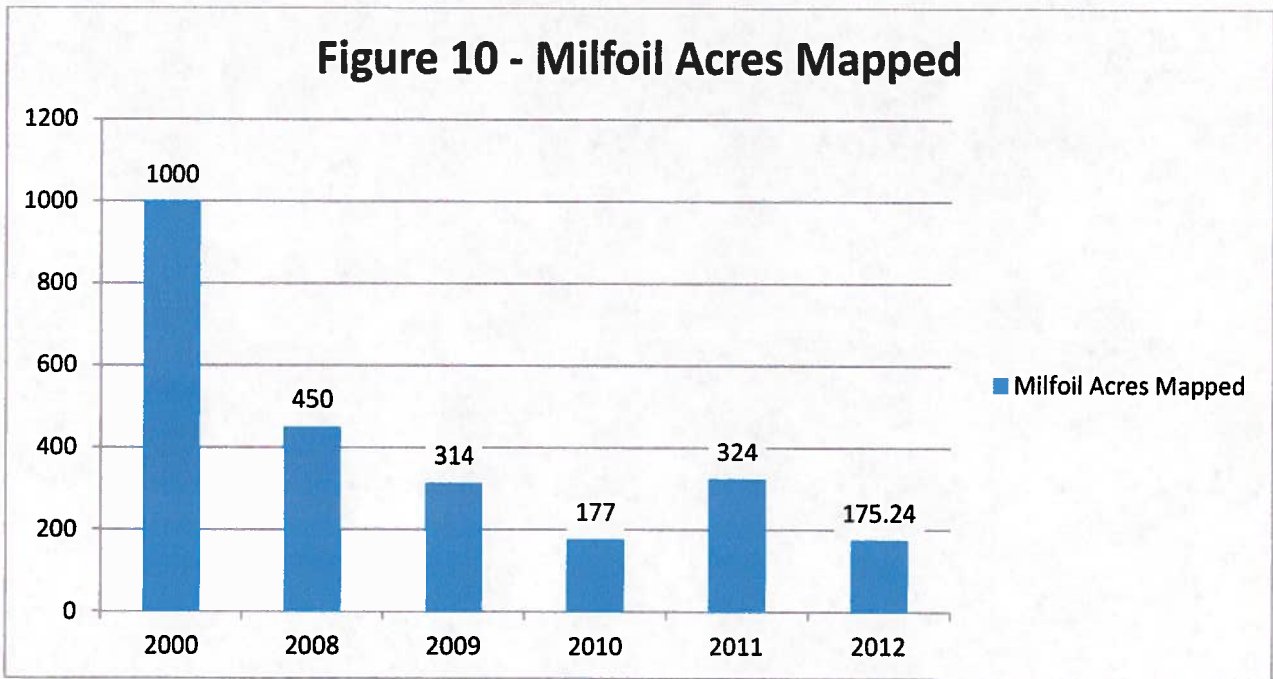


Figure 11 – Milfoil Mapped in 2012, 174 acres



Three methods of herbicide application are used. Each of the application methods utilizes a pontoon boat and two Lake Maintenance employees. The boat driver uses a GPS mapping system to assure applications are made within the mapped boundaries and at the prescribed concentrations. Large areas are treated using vortex physics of water pumped through an eductor nozzle at pressure to draw dry product from a hopper to mix granular herbicide with Lake water and spray it onto the Lake surface. Nozzles installed on either side of the back of the weed harvester barge distribute product in swaths 30 feet wide as the barge moves through the milfoil infested littoral zone. Metering of product delivery in this unit is based on the known delivery rate of the equipment and the speed of the barge moving through the infested area. The other method employs vortex physics but uses air instead of water. Typically called the "Vortex" by the District this method is used for smaller, more pinpoint applications. The unit has a blower that moves air across the bottom opening of a funnel shaped hopper. The air draws the product out of the hopper and is then directed through a hose to a hand held control and nozzle. Metering with this unit is based on an even distribution of a preloaded quantity of product in the hopper and the known area to be treated. The liquid herbicide application was made below the water surface by injection from submerged discharge hoses. An electric metering pump draws herbicide from storage through calibrated hose nozzles trailing from the back of a moving work boat. In all cases application rates are computed using label instruction for plant species, treatment area and water depth.

In 2012, 28,075 pounds of granular and 315 gallons of liquid herbicide were used to treat 175.24 acres of milfoil. Treatment began on June 7 and was completed on August 16, 2012. The cost of herbicide used for treating both the docks and general lake areas totaled \$101,302. Employee expenses, fuel and depreciation for the 2012 program came to \$6150 for a 2012 total program cost of \$107,452.

In areas where native aquatic plants (excludes Milfoil) restrict navigation in and out of private docks and marinas, mechanical means are used to clear paths for vessels. Harvesting efforts began on June 20 and continued through September 13, 2012. A total of 112 loads of weeds were removed to the City composting facility with a wet weight of 796,975 pounds or about 398 tons. The dry weight of the material removed was 79,700 pounds assuming dry weight is 10% of wet weight for an average load.

As plants are harvested the operator notes the species collected during his run. Using the weight and species of aquatic plant and average phosphorous and nitrogen content based on previous sampling and laboratory analysis results for each species, the District estimates total phosphorous and nitrogen removed by the harvesting operation each year. For 2012 an estimated 236 pounds of phosphorous and 1998 pounds of nitrogen were removed from the Lake.

Weed harvesting expenses, including labor, fuel and depreciation, totaled \$29,605 for 2012.

Carp Removal

After observing the effectiveness of electro-shock fishing for Carp by a District contractor in 2007 the District purchased an electro-shock boat in 2008 and installed a commercial grinder placed over a sewer manhole in 2009. Shocked carp are netted and after the boat is filled they are ground up and disposed of in the sanitary sewer at the back of the District shop. The Big Bear Area Regional Wastewater Agency (BBARWA) charges the District \$150 for every 1000 pounds of Carp discharged to the sewer.

Electro-shock fishing began July 25 and the efforts ended after 19 work days on October 5, 2012. The annual Carp Round-Up event also removes carp from the lake. Cash and prizes are awarded for winners in the various divisions. Bow hunters came from California and the southwest to compete in this District sponsored event on the weekend of June 23-24, 2012.

Including the 4,115 pounds of carp shot during the Carp Round-Up the District removal efforts netted 23,070 pounds of carp during summer 2012.

Expenses for the carp removal program including depreciation on the electro-shock boat and the grinder, wages, fuel costs and BBARWA charges for carp disposal in 2012 totaled \$10,090. Fish surveys conducted by the California Department of Fish and Game indicate that the District's carp removal program has dramatically improved game fish populations. Future annual reports will incorporate details from California Department of Fish and Game (now Fish and Wildlife) surveys.

Table 3 – Carp Removal Statistics

Year	Carp Tournament	Electro Shock Fishing	Total Pounds Removed	Cost (approx.)
2007	6,119	96,000	102,119	\$96,000
2008	4,200	26,000	30,200	\$8,909
2009	6,350	36,000	42,350	\$12,490
2010	10,128	39,350	49,478	\$14,551
2011	11,000	20,491	31,491	\$7,000
2012	4,115	18,955	23,070	\$10,090

Quagga Mussel Prevention Program

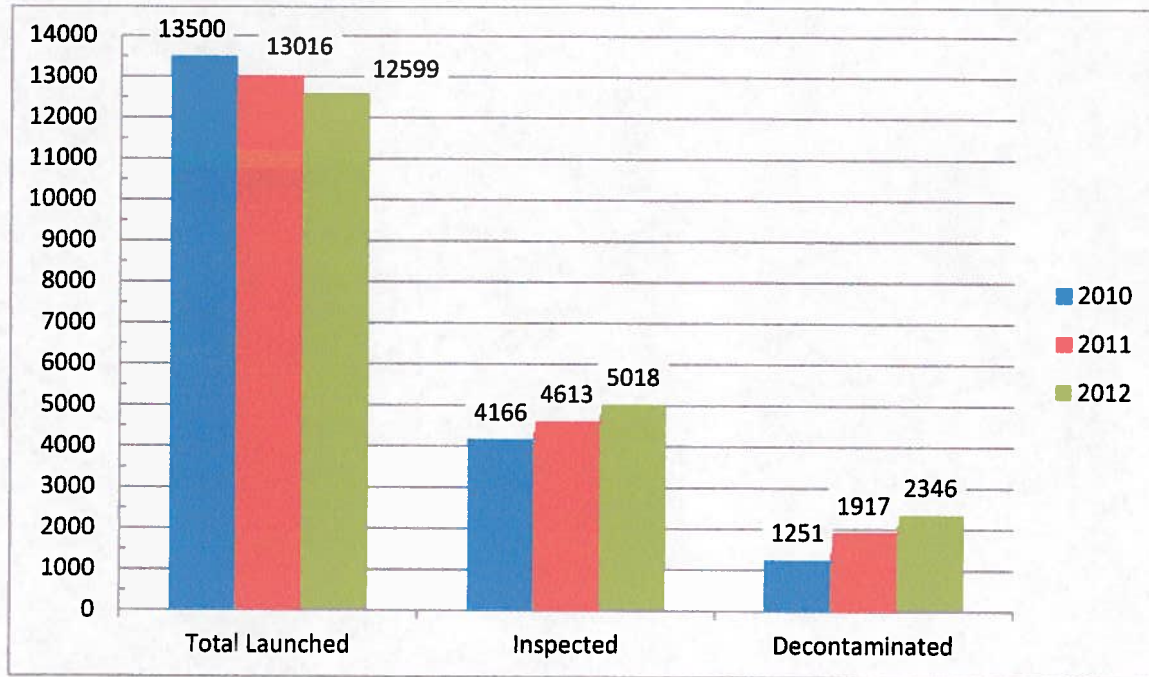
Starting with the boating season of 2008, the District implemented a quagga mussel prevention program aimed at preventing the spread of quagga mussels in Big Bear Lake. The general policy is clean, drained and dry before a vessel can launch. If a vessel does not meet these criteria, the vessel will be decontaminated at one of our public launch ramps. Private marinas along the lake are required to have a level 1 certified quagga mussel inspector available to inspect boats prior to launch. If they encounter a vessel that does not meet the policy, they are sent to one of the public launch ramps for decontamination.

The District has 3 decontamination stations. The East Ramp and West Ramp handle the bulk of the decontaminations. The third station is located at the District's main office and is only run on holidays or special events. The decontamination is conducted by flushing suspect areas of the vessel with hot water. The entire process can take 5 minutes up to 45 minutes depending on the size of the vessel and level of decontamination.

In the spring of each year, the District's Level II quagga mussel inspection trainers conduct a Level I quagga mussel training class to certify new and returning inspectors. The class is a free-of-charge all-day course for both private marina employees and District staff.

The District employs 7 seasonal ramp attendants whose job is to inspect and decontaminate vessels as they arrive at the public launch ramps. In total, the District inspected 5,018 boats at the public launch ramps. Of this number 2,346 vessels were clean and no decontamination was necessary and 1917 vessels were decontaminated. Figure 12 below depicts 2010, 2011 and 2012 decontamination statistics.

Figure 12 – Boat Launches, Inspections and Decontaminations



Summary of 2012 Lake Management Operations Expenses

In Lieu Agreement	\$ 1,195,279
Herbicide Treatment	\$ 107,452
Weed Harvesting	\$ 29,605
Carp Removal and Disposal	\$ 10,090

2012 Weekly Limnology Reports

Lake Level: 6741.8

Down: 1.4

Big Bear Lake
Limnological Monitoring

Taken By: 308 Date: 4/24/2012

All stations are at mid lake 1 = Boom Line 2 = Papoose 3 = West Ramp 4 = Observatory 5 = Juniper Point

STATION	1	2	3	4	5
TIME	10:37	11:14	11:43	12:08	12:29
SECCI	12	11	11	11	7
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn
SKY	Partial High Clouds	Partial High Clouds	Partial High Clouds	Partial High Clouds	Partial High Clouds
WIND SPEED (kts)	3.6	10.1	9	11.4	7.8
WIND DIRECTION	W	W	W	W	W
DEPTH IN METERFEET	TEMP	D.O.	TEMP	D.O.	TEMP
SURFACE	53.7	9.3	54.1F	9.2	55F
1 mtr./3.28 ft. R	53.7	9.3	54.1	9.2	55
(W)	52.8	9.4	53.9	9.3	54.9
(BL)	52.6	9.4	53.2	9.4	54.3
(BL/R)	52.3	9.4	52.7	9.5	53.5
R	52.2	9.3	52.6	9.5	52.5
(W)	51.9	9.3	52.4	9.4	50.3
(BL)	50.6	9.2	51.1	9.4	48.4
(BL/W)	50	9	49.7	9.4	47
R	49.1	9	49.1	9	47
(W)	47.8	8.7	48.6	9	47
(BL)	47.5	8.6	47.8	8.6	46.9
(BL/BL)	47.4	8.5	47.1	8.3	46.2
R	47	8.4	46.7	8.1	
(W)	46.7	8.3	46.3	7.8	
(BL)	46.2	8.1	46.2	7.5	
(BL/R)	46.1	7.7			
R	46	7.6			
(W)	45.9	7.6			
(BL)					
(BL/W)					
R					
(W)					
BOTTOM TEMPS	45.9F	46.2F	46.2F	46.7F	50.2F

Lake Level: 6741

308 Date: 05/10/2012

**Big Bear Lake
Limnological Monitoring**

Taken By:

Down: 1.4

All stations are at mid lake

1=Boom Line 2=Papoose 3=West Ramp 4=Observatory 5=Juniper Point

STATION	1	2	3	4	5
TIME	8:45	9:30	10:05	10:35	10:55
SECCI	12	12	12	12	9
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn
SKY	Clr	Clr	Clr	Clr	Clr
WIND SPEED (kts)	5.7	10.3	11.7	10.2	14.4
WIND DIRECTION	W	W	W	W	W
DEPTH IN METERS/FEET	TEMP	TEMP	TEMP	TEMP	TEMP
	D.O.	D.O.	D.O.	D.O.	D.O.
SURFACE	TEMP	TEMP	TEMP	TEMP	TEMP
	D.O.	D.O.	D.O.	D.O.	D.O.
1 mtr./3.28 ft. R	58.2F	58.2F	58.1F	58.3F	57.9F
	8.4	8.1	8	8	8
2 mtr./6.56 ft. (W)	58.2	58.2	58.1	58.3	57.9
	8	8.1	8.1	8	8
3 mtr./9.84 ft. (BL)	57.6	58.1	58.1	58.3	57.8
	7.9	8.1	8.1	8	8
4 mtr./13.12 ft. (BL/R)	57.3	58.1	58.1	58.3	57.8
	7.9	8.1	8	7.9	7.8
5 mtr./16.40 ft. R	57.1	57.5	58	57.8	57.8
	7.7	8	8	7.9	7.8
6 mtr./19.68 ft. (W)	57.1	57.4	57.9	57.6	57.8
	7.6	7.9	7.9	7.8	7.8
7 mtr./22.96 ft. (BL)	57	56.7	57.5	57.2	57.7
	7.5	7.7	7.8	7.8	7.8
8 mtr./26.24 ft. (BL/W)	56.8	56.5	57.1	56.5	57.5
	7.6	7.5	7.6	7.3	7.5
9 mtr./29.52 ft. R	56.6	56.1	56	55.1	
	7.3	7.3	6.9	5.7	
10 mtr./32.80 ft. (W)	54.9	54.7	53.8	53.2	
	6.9	6.7	5.2	4.8	
11 mtr./36.00 ft. (BL)	54	54	53.3	52.4	
	6.4	6.4	4.7	3.3	
12 mtr./39.36 ft.(BL/BL)	51.7	52.8	50.8		
	5.9	6.1	4.2		
13 mtr./42.64 ft. R	50.3	51.2			
	5.4	5.3			
14 mtr./45.92 ft. (W)	50.1	50.6			
	4.7	4.8			
15 mtr./49.20 ft. (BL)	49.9	49.8			
	4.5	4.8			
16 mtr./52.48 ft. (BL/R)	49.7				
	4.6				
17 mtr./55.76 ft. R	49.4				
	4.3				
18 mtr./59.04 ft. (W)	49.3				
	2.8				
19 mtr./62.32 ft. (BL)	49.1				
	1.9				
20 mtr./65.60 ft. (BL/W)					
21 mtr./68.88 ft. R					
22 mtr./72.16 ft. (W)					
BOTTOM TEMPS	49.1F	49.8F	50.8F	52.4F	57.5F

Lake Level: 6741.7

**Big Bear Lake
Limnological Monitoring**

Taken By: 309 Date: 5/16/2012

1.49

STATION	1		2		3		4		5	
	TIME	8:10	8:50	9:20	9:50	10:15	SECCI	10	11	10
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Clear	Clear	Med Grn	Med Grn
SKY	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
WIND SPEED (kts)	1.4	1.9	7	7	2.7	7.6				
WIND DIRECTION	E	S.W.	NE	NE	NE	NE				
DEPTH IN METERS/FEET	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.
SURFACE	58.8F	7.8	59 F	7.8	60.3F	7.9	62F	8	62.7F	7.7
1 mtr./3.28 ft. R	58.6	7.8	59	7.8	60	7.9	61.5	8	62.7	7.7
2 mtr./6.56 ft. (W)	58.5	7.8	58.9	7.8	59.8	7.9	61.3	8	62.6	7.6
3 mtr./9.84 ft. (BL)	58.4	7.7	58.8	7.7	59.6	7.9	61.1	8	62.4	7.9
4 mtr./13.12 ft. (BL/R)	58.4	7.7	58.7	7.6	59.4	7.7	61	7.9	62.1	7.8
5 mtr./16.40 ft. R	58.3	7.7	58.4	7.6	59.3	7.7	60.8	7.6	62	7.8
6 mtr./19.68 ft. (W)	58.7	7.5	58.4	7.6	59.1	7.6	60.6	7.5	60.5	6.1
7 mtr./22.96 ft. (BL)	57.9	7.4	58.2	7.4	58.1	7.3	59.8	7.5	58.8	4.8
8 mtr./26.24 ft. (BL/W)	57.7	7.3	57.6	7.1	56.6	5.8	59.2	7.2		
9 mtr./29.52 ft. R	57.6	7.1	57.1	6.2	55.6	5.7	57	4.9		
10 mtr./32.80 ft. (W)	56.3	6.5	56.1	4.4	55.4	5.6	56.1	3.7		
11 mtr./36.00 ft. (BL)	52.7	3.8	54	4.1	54.6	4.9				
12 mtr./39.36 ft.(BL/BL)	52.7	3.7	53.2	3.3	53.7	4.1				
13 mtr./42.64 ft. R	52.7	3.5	52.6	2.7						
14 mtr./45.92 ft. (W)	52.7	3.5	52.2	2.6						
15 mtr./49.20 ft. (BL)	52.7	3.6	52.1							
16 mtr./52.48 ft. (BL/R)	52.7	3.7								
17 mtr./55.76 ft. R	52.7	3.6								
18 mtr./59.04 ft. (W)	52.7	3.7								
19 mtr./62.32 ft. (BL)										
20 mtr./65.60 ft. (BL/W)										
21 mtr./68.88 ft. R										
22 mtr./72.16 ft. (W)										
BOTTOM TEMPS	52.7F		52.1F		53.7F		56.1F		58.8F	

Lake Level: 6741.5

Down: 1.72

**Big Bear Lake
Limnological Monitoring**

Taken By: 309 Date: 5/30/2012

STATION	1		2		3		4		5	
	TIME	8:30	9:10	9:35	10:05	10:30	TIME	10:05	10:30	6'
SECCI	10'	10'	10'	11'	10'	6'				
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn				Med Grn
SKY	Clear	Clear	Clear	Clear	Clear	Clear				Clear
WIND SPEED (kts)	1.8	5.4	7.8	7.8	9.5	8.9				8.9
WIND DIRECTION	SE	W	W	W	W	W				W
DEPTH IN METERS/FEET	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.
SURFACE	59.5	7.4	60.2	7.3	61	7.5	61.5	7.6	62.1	7.4
1 mtr./3.28 ft. R	59.5	7.2	60	7.3	60.5	7.5	61.5	7.5	62.1	7.4
2 mtr./6.56 ft. (W)	59.2	7.2	59.7	7.3	60.4	7.4	61.2	7.5	62.1	7.3
3 mtr./9.84 ft. (BL)	59.1	7.1	59.6	7.3	60.1	7.4	61	7.5	62	7.3
4 mtr./13.12 ft. (BL/R)	59.1	7.1	59.4	7.3	60	7.4	60.9	7.5	61.4	7.3
5 mtr./16.40 ft. R	58.9	7.1	59.3	7.3	60	7.3	60.8	7.4	61.3	7.3
6 mtr./19.68 ft. (W)	58.9	7.1	58.8	6.8	59.5	6.5	60.7	7.3	61.3	7.3
7 mtr./22.96 ft. (BL)	58.9	7.1	58.8	6.8	59	6	60.7	7.2	61	7.3
8 mtr./26.24 ft. (BL/W)	58.9	7.1	58.7	6.8	58.2	6	60.6	7.1		
9 mtr./29.52 ft. R	58.8	6.9	58.6	6.8	58.9	5.3	59.1	5		
10 mtr./32.80 ft. (W)	58.6	6.7	58.3	6.8	57.2	4.4	58.4	3.6		
11 mtr./36.00 ft. (BL)	58.6	6.7	58.1	6.7	57.1	4				
12 mtr./39.36 ft.(BL/BL)	58.5	6.7	58.1	6.6	56.8	2.7				
13 mtr./42.64 ft. R	58.4	6.7	57.7	5.7						
14 mtr./45.92 ft. (W)	58.4	6.6	56.9	4						
15 mtr./49.20 ft. (BL)	58.3	6.5	56.5	2.9						
16 mtr./52.48 ft. (BL/R)	57.6	5.4								
17 mtr./55.76 ft. R	57.4	4.8								
18 mtr./59.04 ft. (W)	56.5	2.7								
19 mtr./62.32 ft. (BL)										
20 mtr./65.60 ft. (BL/W)										
21 mtr./68.88 ft. R										
22 mtr./72.16 ft. (W)										
BOTTOM TEMPS	56.5F	56.5F	56.5F	56.8F	58.4F	61.0F				

Lake Level: 6741.4

**Big Bear Lake
Limnological Monitoring**

Taken By: 309 Date: 6/6/2012

Down: 1.83

STATION	1	2	3	4	5	
TIME	8:15	8:50	9:30	9:55	10:25	
SECCI	9'	9'	9'	8'	6'	
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	
SKY	Clear	Clear	Clear	Clear	Clear	
WIND SPEED (kts)	11	7.4	8.5	10	11.6	
WIND DIRECTION	E	E	E	E	SE	
DEPTH IN METERS/FEET	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.
SURFACE	60.7	61.4	61.8	63.4	64.3	7
1 mtr./3.28 ft. R	60.7	61.4	61.8	63.4	64.3	7
2 mtr./6.56 ft. (W)	60.7	61.4	61.8	63.4	64.3	7
3 mtr./9.84 ft. (BL)	60.7	61.4	61.8	63.3	64.2	7
4 mtr./13.12 ft. (BL/R)	60.7	61.4	61.8	63.3	64.2	6.9
5 mtr./16.40 ft. R	60.7	61.3	61.8	63.3	64.2	6.9
6 mtr./19.68 ft. (W)	60.6	61.1	61.7	63.1	64.1	6.9
7 mtr./22.96 ft. (BL)	60.6	61	61.6	63.1	63.6	6.4
8 mtr./26.24 ft. (BL/W)	60.5	60.8	60.9	62.9		
9 mtr./29.52 ft. R	60.5	60.7	59.6	62.6		
10 mtr./32.80 ft. (W)	60.4	60.6	58.4	62.5		
11 mtr./36.00 ft. (BL)	60.3	60.5	58.3			
12 mtr./39.36 ft.(BL/BL)	60.2	60.1	58.2			
13 mtr./42.64 ft. R	60.1	59.4				
14 mtr./45.92 ft. (W)	60.1	59.1				
15 mtr./49.20 ft. (BL)	60.1	58.1				
16 mtr./52.48 ft. (BL/R)	60.1					
17 mtr./55.76 ft. R	59.9					
18 mtr./59.04 ft. (W)	59.2					
19 mtr./62.32 ft. (BL)						
20 mtr./65.60 ft. (BL/W)						
21 mtr./68.88 ft. R						
22 mtr./72.16 ft. (W)						
BOTTOM TEMPS	59.2F	58.1F	58.2F	62.5F	63.6F	

Lake Level: 6741.3

**Big Bear Lake
Limnological Monitoring**

Down: 1.95 Taken By: 309 Date: 6/13/2012

STATION	1		2		3		4		5	
	TIME	8:40	9:15	10:00	10:35	11:02	TEMP	D.O.	TEMP	D.O.
SECCI	10'	10'	10'	10'	10'	8'				
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn				
SKY	Clear	Clear	Clear	Clear	Clear	Clear				
WIND SPEED (kts)	5.8	6.8	11.5	11.5	11.5	9.4				
WIND DIRECTION	W	W	W	W	W	W				
DEPTH IN METERS/FEET	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.
SURFACE	63.4	7.7	63.5	7.3	64.3	7.3	65.7	7.1	66.5	7.2
1 mtr./3.28 ft. R	63.3	7.6	63.5	7.3	64.3	7.2	65.6	7.1	66.5	7.2
2 mtr./6.56 ft. (W)	63.1	7.5	63.3	7.3	64.2	7.2	65.4	7	66.4	7.2
3 mtr./9.84 ft. (BL)	63.1	7.4	63.3	7.2	64.1	7.2	65.2	7	66.1	7.2
4 mtr./13.12 ft. (BL/R)	63	7.4	63.2	7.2	63.9	7	65.1	6.9	65.8	7.2
5 mtr./16.40 ft. R	63	7.4	63.1	7.2	63.7	6.7	65	6.9	65.5	7.1
6 mtr./19.68 ft. (W)	63	7.4	63	7.2	63	5.8	64.9	6.8	65.3	6.5
7 mtr./22.96 ft. (BL)	63	7.3	62.9	7.2	62.4	5.7	64.3	6.4	64.1	4
8 mtr./26.24 ft. (BL/W)	62.8	7.3	62.7	7.2	61.9	5.5	63.6	6.3		
9 mtr./29.52 ft. R	62.7	7.3	62.7	7.2	60.5	4.1	61.7	4.4		
10 mtr./32.80 ft. (W)	62.6	7.3	62.3	7.1	60.4	4	61.2	3.4		
11 mtr./36.00 ft. (BL)	62.6	7.2	62.2	6.9	60.3	3.7				
12 mtr./39.36 ft.(BL/BL)	62.5	7.2	62.2	6.6	59.9	2.7				
13 mtr./42.64 ft. R	62.3	7.1	61.2	5.8						
14 mtr./45.92 ft. (W)	61.9	6.5	61	5.1						
15 mtr./49.20 ft. (BL)	61.2	5.5	59.8	2.7						
16 mtr./52.48 ft. (BL/R)	60.8	4.9								
17 mtr./55.76 ft. R	59.8	2.8								
18 mtr./59.04 ft. (W)	59.6	2.5								
19 mtr./62.32 ft. (BL)										
20 mtr./65.60 ft. (BL/W)										
21 mtr./68.88 ft. R										
22 mtr./72.16 ft. (W)										
BOTTOM TEMPS	59.6F	59.8F	59.9F	61.2F	64.1F					

Lake Level: 6741.1

Down: 2.11

**Big Bear Lake
Limnological Monitoring**

Taken By: 309 Date: 6/20/2012

STATION	1		2		3		4		5	
	TIME	8:30	9:10	9:45	10:15	10:45	TIME	6'	6'	4'
SECCI	7'	8'	6'	6'	6'	6'	Med Grn	Med Grn	Med Grn	Med Grn
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Clear	Clear	Clear	Clear
SKY	Clear	Clear	Clear	Clear	Clear	Clear	12	12	12	12.4
WIND SPEED (kts)	6.6	12.3	12	12	12	12				
WIND DIRECTION										
DEPTH IN METERS/FEET	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.
SURFACE	63.9	6.8	64.8	6.8	65.2	6.7	65.6	6.5	66.1	6.5
1 mtr./3.28 ft. R	63.9	6.7	64.8	6.8	65.2	6.7	65.6	6.5	66.2	6.5
2 mtr./6.56 ft. (W)	63.9	6.6	64.5	6.7	65.1	6.7	65.5	6.5	66.1	6.4
3 mtr./9.84 ft. (BL)	63.9	6.6	64.4	6.7	64.8	6.7	65.5	6.4	65.9	6.4
4 mtr./13.12 ft. (BL/R)	63.9	6.6	64.3	6.6	64.7	6.7	65.2	6.4	65.7	6.4
5 mtr./16.40 ft. R	63.9	6.6	64.2	6.5	64.7	6.6	65	6.3	65.5	6.4
6 mtr./19.68 ft. (W)	63.9	6.6	64.2	6.5	64.6	6.5	65	6.3	65.5	6.4
7 mtr./22.96 ft. (BL)	63.9	6.6	64.1	6.5	64.6	6.4	64.9	6.3	65.5	6.3
8 mtr./26.24 ft. (BL/W)	63.7	6.4	63.9	6.4	64.5	6.4	64.8	6.3		
9 mtr./29.52 ft. R	63.7	6.4	63.8	6.4	64.5	6.4	64.7	6.2		
10 mtr./32.80 ft. (W)	63.6	6.4	63.8	6.4	64.5	6.4	64.7	6.1		
11 mtr./36.00 ft. (BL)	63.6	6.3	63.7	6.3	62.4	3.1				
12 mtr./39.36 ft.(BL/BL)	63.5	6.3	63.7	6.3	62.3	2.8				
13 mtr./42.64 ft. R	63.4	6.3	63.2	5.9						
14 mtr./45.92 ft. (W)	63.4	6.3	62.6	4						
15 mtr./49.20 ft. (BL)	63.4	6.3	62.2	2.5						
16 mtr./52.48 ft. (BL/R)	63.4	6.3								
17 mtr./55.76 ft. R	63.3	6.1								
18 mtr./59.04 ft. (W)	62.4	3.1								
19 mtr./62.32 ft. (BL)										
20 mtr./65.60 ft. (BL/W)										
21 mtr./68.88 ft. R										
22 mtr./72.16 ft. (W)										
BOTTOM TEMPS	62.4F	62.2F	62.3F	64.7F	65.5F					

Lake Level: 6740.9

Down: 2.27

**Big Bear Lake
Limnological Monitoring**

Taken By: 309 Date: 6/27/2012

STATION	1		2		3		4		5	
	TIME	8:10	10:50	9:55	10:20	11:30	SECCI	7'	8'	7'
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Clear	Clear	Clear	Med Grn
SKY	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
WIND SPEED (kts)	7.7	9.8	8.9	8.9	18.9	13.4	WIND DIRECTION	NW	NW	SW
DEPTH IN METERS/FEET	TEMP	D.O.	Temp	D.O.	Temp	D.O.	TEMP	D.O.	TEMP	D.O.
SURFACE	64.6	7.1	65.3	6.8	65.8	7	66.6	7	67.5	7.6
1 mtr./3.28 ft. R	64.5	6.9	65.3	6.8	65.8	7	66.6	7	67.5	7.5
2 mtr./6.56 ft. (W)	64.5	6.8	65.3	6.8	65.6	7	66.6	7	67.5	7.5
3 mtr./9.84 ft. (BL)	64.4	6.8	65.2	6.8	65.6	7	66.5	7	67.4	7.5
4 mtr./13.12 ft. (BL/R)	64.4	6.7	64.5	6.8	65.5	7	66.4	7	67.4	7.4
5 mtr./16.40 ft. R	64.3	6.7	64.4	6.7	65.4	6.9	66.3	6.9	67.3	7.4
6 mtr./19.68 ft. (W)	64.3	6.6	64.4	6.7	65.3	6.7	66	6.9	67	7.4
7 mtr./22.96 ft. (BL)	64.3	6.6	64.3	6.7	64.3	6	65.8	6.9	66.8	7.4
8 mtr./26.24 ft. (BL/W)	64.3	6.6	64.2	6.7	63.7	7.7	65.2	5		
9 mtr./29.52 ft. R	64.2	6.5	64.2	6.7	63.5	4.3	65.1	4.7		
10 mtr./32.80 ft. (W)	64	6.5	64	6.5	63.4	4.1	64.7	4.2		
11 mtr./36.00 ft. (BL)	64	6.5	63.8	6.1	63.4	4.1				
12 mtr./39.36 ft.(BL/BL)	64	6.5	63.7	6.1	63.2	2.9				
13 mtr./42.64 ft. R	64	6.5	63.7	6.1						
14 mtr./45.92 ft. (W)	63.9	6.5	63.4	5.3						
15 mtr./49.20 ft. (BL)	63.9	6.5	63.1	2.8						
16 mtr./52.48 ft. (BL/R)	63.7	6.2								
17 mtr./55.76 ft. R	63.7	6.1								
18 mtr./59.04 ft. (W)	63.5	5.4								
19 mtr./62.32 ft. (BL)										
20 mtr./65.60 ft. (BL/W)										
21 mtr./68.88 ft. R										
22 mtr./72.16 ft. (W)										
BOTTOM TEMPS	63.5F	63.1F	63.2F	64.7F	66.8F					

Lake Level: 6741

Down: 2.4

**Big Bear Lake
Limnological Monitoring**

Taken By: 308 Date: 7/5/2012

STATION	1	2	3	4	5
TIME	9:35	10:15	10:45	11:10	11:35
SECCI	11	12	11	9	5
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Brn-Grn
SKY	Clr	Clr	Clr	Clr	Clr
WIND SPEED (kts)	5.2	9	10	9.1	7.8
WIND DIRECTION	W	W	W	W	W
DEPTH IN METERS/FEET	TEMP	TEMP	TEMP	TEMP	TEMP
	D.O.	D.O.	D.O.	D.O.	D.O.
SURFACE	66.4	66.8	67.5	68.9	69.6
	6.9	6.8	6.8	6.8	6.9
1 mtr./3.28 ft. R	66.4	66.8	67.5	68.9	69.6
	6.9	6.8	6.8	6.9	6.9
2 mtr./6.56 ft. (W)	66.3	66.7	67.4	68.7	69.3
	6.9	6.7	6.8	6.9	6.9
3 mtr./9.84 ft. (BL)	66.2	66.6	67.3	68.2	68.8
	6.8	6.7	6.8	6.9	6.8
4 mtr./13.12 ft. (BL/R)	66.2	66.4	64	68	68.7
	6.8	6.7	6.8	6.8	6.8
5 mtr./16.40 ft. R	66.1	66.3	66.9	67.9	68.5
	6.7	6.6	6.7	6.7	6.7
6 mtr./19.68 ft. (W)	66.1	66.1	66.6	67.8	68.5
	6.7	6.5	6.6	6.6	6.6
7 mtr./22.96 ft. (BL)	66	66.1	65.7	67.6	68.4
	6.6	6.5	6.5	6.1	6.5
8 mtr./26.24 ft. (BL/W)	66	66.1	64.4	67.6	
	6.6	6.5	4.2	6.1	
9 mtr./29.52 ft. R	67.4	65.8	64.2	66.9	
	7.5	6.3	3.7	4.9	
10 mtr./32.80 ft. (W)	65.9	65.4	67.2		
	6.5	6	3.6		
11 mtr./36.00 ft. (BL)	65.8	65.4	67.2		
	6.4	6	3.6		
12 mtr./39.36 ft.(BL/BL)	65.8	65.4	64		
	6.5	6	3.1		
13 mtr./42.64 ft. R	65.7	65			
	6.4	5.7			
14 mtr./45.92 ft. (W)	65.5	64.6			
	6.2	5			
15 mtr./49.20 ft. (BL)	65.3	63.7			
	6	2			
16 mtr./52.48 ft. (BL/R)	64.9				
	5.5				
17 mtr./55.76 ft. R	64.6				
	4.9				
18 mtr./59.04 ft. (W)	64.5				
	4.5				
19 mtr./62.32 ft. (BL)					
20 mtr./65.60 ft.(BL/W)					
21 mtr./68.88 ft. R					
22 mtr./72.16 ft. (W)					
BOTTOM TEMPS	64.5	63.7	64	66.9	68.4

Lake Level: 6740.7

Down:2.54

**Big Bear Lake
Limnological Monitoring**

Taken By: 309 Date: 7/11/2012

STATION	1		2		3		4		5	
	TIME	8:30	9:30	10:00	11:00	11:00	11:30	11:00	11:30	11:30
SECCI	12'	13'	13'	13'	13'	13'	13'	13'	13'	7'
WATER COLOR	Med Grn	Med Green	Med Green	Med Green	Med Green	Med Green	Med Green	Med Green	Med Green	Med Green
SKY	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
WIND SPEED (kts)	2.5	6.9	5.7	5.7	5.7	5.7	6.2	6.2	6.2	10.1
WIND DIRECTION	E	W	W	W	W	W	W	W	W	W
DEPTH IN METERS/FEET	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.
SURFACE	68.6	7.5	69	7.4	69.6	7.6	71.4	7.8	72.4	9.3
1 mtr./3.28 ft. R	68.4	7.3	68.8	7.4	69.5	7.6	71.3	7.7	72.7	9.3
2 mtr./6.56 ft. (W)	68.2	7.2	68.7	7.4	69.3	7.6	71.2	7.7	72.4	9.3
3 mtr./9.84 ft. (BL)	68.2	7.2	68.5	7.4	69.2	7.6	70.8	7.7	71.7	9.3
4 mtr./13.12 ft. (BL/R)	68.2	7.2	68.3	7.4	69	7.6	70.3	7.6	71.5	9.1
5 mtr./16.40 ft. R	68.2	7.1	68.3	7.4	68.4	6.7	69.9	7.4	69	7
6 mtr./19.68 ft. (W)	68.2	7.1	68.3	7.4	67.1	6.7	69.3	7.2	68.1	5.1
7 mtr./22.96 ft. (BL)	68	7.1	68.1	7.3	66.8	6.7	68.2	7.1	68	2.3
8 mtr./26.24 ft. (BL/W)	67.9	7.1	67.6	7.2	66	5.4	67.77	5.3		
9 mtr./29.52 ft. R	67.8	7.1	67.5	7	66	5.5	67.3	4.7		
10 mtr./32.80 ft. (W)	67.7	7	67.1	6.2	65.6	4.9	66.3	4.3		
11 mtr./36.00 ft. (BL)	67.6	6.9	66.4	5.4	65.3	4.1				
12 mtr./39.36 ft.(BL/BL)	67	6.5	66	4.5	65.2	4				
13 mtr./42.64 ft. R	65.2	3.7	65.5	3.6						
14 mtr./45.92 ft. (W)	65.1	3.3	65	3.3						
15 mtr./49.20 ft. (BL)	64.9	2.8	64.9							
16 mtr./52.48 ft. (BL/R)	64.8	2.6								
17 mtr./55.76 ft. R	64.7	2.4								
18 mtr./59.04 ft. (W)	64.6	2.1								
19 mtr./62.32 ft. (BL)										
20 mtr./65.60 ft. (BL/W)										
21 mtr./68.88 ft. R										
22 mtr./72.16 ft. (W)										
BOTTOM TEMPS	64.6 F	64.9 F	65.2 F	66.3 F	68.0 F					

Lake Level: 6740.6

Down: 2.57

**Big Bear Lake
Limnological Monitoring**

Taken By: 309 Date: 7/18/2012

STATION	1			2			3			4			5		
	TIME	SECCI		TIME	SECCI		TIME	SECCI		TIME	SECCI		TIME	SECCI	
	8:30	9'		9:00	9'		9:30	9'		10:00	8'		10:30	5'	
WATER COLOR	Med Grn			Med Grn			Med Grn			Med Grn			Med Grn		
SKY	High Clouds			High Clouds			High Clouds			High Clouds			High Clouds		
WIND SPEED (kts)	7.6			7.6			8.8			4.5			11.5		
WIND DIRECTION	W			W			W			W			W		
DEPTH IN METERS/FEET	TEMP	D.O.		TEMP	D.O.		TEMP	D.O.		TEMP	D.O.		TEMP	D.O.	
SURFACE															
1 mtr./3.28 ft. R	67	6.8		67.2	6.8		68	7.2		69	7.8		69.2	8.1	
2 mtr./6.56 ft. (W)	67	6.6		67.2	6.8		68	7.2		68.9	7.7		69.2	8	
3 mtr./9.84 ft. (BL)	67	6.5		67.2	6.8		68	7.2		68.9	7.7		69.2	8	
4 mtr./13.12 ft. (BL/R)	67	6.4		67.2	6.8		68	7.1		68.8	7.7		68.9	8	
5 mtr./16.40 ft. R	67	6.4		67.2	6.8		67.9	7		68.8	7.6		68.7	8	
6 mtr./19.68 ft. (W)	67	6.4		67.2	6.8		67.8	7		68.8	7.6		68.6	8	
7 mtr./22.96 ft. (BL)	67	6.4		67.2	6.7		67.8	7		68.7	7.5		68.5	8	
8 mtr./26.24 ft. (BL/W)	67	6.4		67.2	6.7		67.7	6.9		68.7	7.5				
9 mtr./29.52 ft. R	67	6.3		67.2	6.7		67.6	6.6		68.6	7.5				
10 mtr./32.80 ft. (W)	66.9	6.3		67.1	6.6		67.4	6.4		68.4	7.5				
11 mtr./36.00 ft. (BL)	66.9	6.2		67	6.5		66.4	3.3		68.3	7.5				
12 mtr./39.36 ft.(BL/BL)	66.8	6.2		67	6.4		65.6	1.4							
13 mtr./42.64 ft. R	66.7	6.1		66.7	6		65.4	1.2							
14 mtr./45.92 ft. (W)	66.6	5.8		66.7	5.5										
15 mtr./49.20 ft. (BL)	65.5	2.1		66.2	3.9										
16 mtr./52.48 ft. (BL/R)	65.2	0.9		65.4	1.2										
17 mtr./55.76 ft. R	64.8	0.7													
18 mtr./59.04 ft. (W)	64.5	0.7													
19 mtr./62.32 ft. (BL)															
20 mtr./65.60 ft. (BL/W)															
21 mtr./68.88 ft. R															
22 mtr./72.16 ft. (W)															
BOTTOM TEMPS															
	64.5			65.4			65.4			68.3			68.5		

Lake Level: 6740.5

**Big Bear Lake
Limnological Monitoring**

Taken By: 309 Date: 7/25/2012

Down: 2.68

STATION	1		2		3		4		5	
	TIME	9:00	8:30	9:45	10:10	10:30	9'	9'	9'	5'
SECCI	9'		9'							
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn
SKY	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
WIND SPEED (kts)	5.2	9.5	9.5	9.5	10.9	8.6				
WIND DIRECTION	NW	NW	NW	NW	NW	NW				NW
DEPTH IN METERS/FEET	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.
SURFACE	68.1	7	68.4	7.7	69.1	7.8	70.5	7.9	71	8.2
1 mtr./3.28 ft. R	68.1	7	68.4	7.7	69.1	7.8	70.5	7.9	71	8.2
2 mtr./6.56 ft. (W)	68.1	7	68.4	7.6	69.1	7.8	70.4	7.9	70.9	8.2
3 mtr./9.84 ft. (BL)	68.1	7	68.4	7.5	69	7.8	70.3	7.8	70.8	8.2
4 mtr./13.12 ft. (BL/R)	68.1	7	68.4	7.5	69	7.8	70.2	7.8	70.7	8.2
5 mtr./16.40 ft. R	68	6.9	68.3	7.4	69	7.8	70.2	7.7	70.7	8.2
6 mtr./19.68 ft. (W)	68	6.8	68	7.1	68.9	7.6	70	7.6	70.5	8.2
7 mtr./22.96 ft. (BL)	68	6.7	67.7	6.8	68	5.7	70	7.6	70.3	2
8 mtr./26.24 ft. (BL/W)	67.9	6.6	67.6	6.6	67.3	4.4	69.7	7.3		
9 mtr./29.52 ft. R	67.9	6.6	67.6	6.5	66.6	2.9	68.6	4.7		
10 mtr./32.80 ft. (W)	67.9	6.6	67.5	6.4	66.3	2.1	67.8	2.8		
11 mtr./36.00 ft. (BL)	67.8	6.6	67.2	5.8	66.3	2				
12 mtr./39.36 ft.(BL/BL)	67.7	6.6	67.2	5.6	66.2	1.9				
13 mtr./42.64 ft. R	67.3	6.2	66.9	5.1						
14 mtr./45.92 ft. (W)	67.1	5.6	66.5	3.4						
15 mtr./49.20 ft. (BL)	66.9	5.5	66.5	3.3						
16 mtr./52.48 ft. (BL/R)	66.8	5.3								
17 mtr./55.76 ft. R	66.7	5.2								
18 mtr./59.04 ft. (W)										
19 mtr./62.32 ft. (BL)										
20 mtr./65.60 ft.(BL/W)										
21 mtr./68.88 ft. R										
22 mtr./72.16 ft. (W)										
BOTTOM TEMPS	66.7F		66.5F		66.2F		67.8F		70.3F	

Lake Level: 6740.4'

Down: 2.84'

**Big Bear Lake
Limnological Monitoring**

Taken By: 309 Date: 8/1/2012

STATION	1	2	3	4	5
TIME	8:30	9:00	9:40	10:10	10:40
SECCI	9'	9'	9'	7'	5'
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn
SKY	Clear	Partly Cloudy	Partly Cloudy	100% Clouds	100% Clouds
WIND SPEED (kts)	4.1	2.3	5.1	5.6	5.4
WIND DIRECTION	SE	NE	NE	NE	NE
DEPTH IN METERS/FEET	TEMP	TEMP	TEMP	TEMP	TEMP
	D.O.	D.O.	D.O.	D.O.	D.O.
SURFACE	68.5	69.2	69.8	70.6	70.1
1 mtr./3.28 ft. R	8.2	8.2	8.3	8.2	8.2
2 mtr./6.56 ft. (W)	8.2	8.2	8.3	8.2	8.2
3 mtr./9.84 ft. (BL)	8.1	8.1	8.3	8.2	8.2
4 mtr./13.12 ft. (BL/R)	8	7.9	8.2	8.2	8
5 mtr./16.40 ft. R	7.9	7.7	8.2	8.2	7.9
6 mtr./19.68 ft. (W)	68.2	68	68.7	69.7	69.9
7 mtr./22.96 ft. (BL)	68.1	67.8	68.4	69.4	69.7
8 mtr./26.24 ft. (BL/W)	7.8	7.5	8.1	8.1	7.5
9 mtr./29.52 ft. R	68.1	67.6	68.3	69.3	69.4
10 mtr./32.80 ft. (W)	68.1	67.6	68	69	68.8
11 mtr./36.00 ft. (BL)	7.7	7.5	7.3	7.5	7.5
12 mtr./39.36 ft.(BL/BL)	7.6	7.4	6.1	6.1	5.7
13 mtr./42.64 ft. R	67.9	67.6	67.4	68.4	5.7
14 mtr./45.92 ft. (W)	67.9	67.6	67	67.5	5.7
15 mtr./49.20 ft. (BL)	67.9	67.5	67	67.2	5.1
16 mtr./52.48 ft. (BL/R)	67.8	67.5	66.8	67.2	
17 mtr./55.76 ft. R	67.7	67.3	66.7		
18 mtr./59.04 ft. (W)	67.7	67.1			
19 mtr./62.32 ft. (BL)	67.4	66.9			
20 mtr./65.60 ft. (BL/W)	67.4	66.8			
21 mtr./68.88 ft. R	67.4	66.8			
22 mtr./72.16 ft. (W)	67.2				
BOTTOM TEMPS	67.2F	66.8F	66.7F	67.2F	68.8F

Lake Level: 6740.3

Down: 2.95

**Big Bear Lake
Limnological Monitoring**

Taken By: 309 Date: 8/8/2012

STATION	1		2		3		4		5	
	TIME	8:45	8:15	9:15	10:15	10:55	TEMP	D.O.	TEMP	D.O.
SECCI	9'	9'	9'	9'	9'	7'				
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn				
SKY	Clear	Clear	Clear	Clear	Partly Cloudy	Partly Cloudy				
WIND SPEED (kts)	1.7	2.3	1.7	1.7	15.2	6.8				
WIND DIRECTION	E	E	E	E	SE	SE				
DEPTH IN METERS/FEET	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.
SURFACE	69.8	7.8	69.6	8.4	70.4	8.7	71.2	8.8	71.8	11.2
1 mtr./3.28 ft. R	69.5	7.8	69.6	8.1	70.4	8.6	71	8.8	71.8	11.2
2 mtr./6.56 ft. (W)	69.3	7.7	69.6	8.1	70.1	8.6	70.7	9.2	71.7	11.2
3 mtr./9.84 ft. (BL)	69.2	7.6	69.6	7.9	70	8.6	70.5	9.2	71.4	11.2
4 mtr./13.12 ft. (BL/R)	69.2	7.6	69.5	7.6	69.7	8.6	70.5	9.2	70.8	10.9
5 mtr./16.40 ft. R	69.2	7.6	69.5	7.4	69.5	8.1	70.4	9	70.6	10.3
6 mtr./19.68 ft. (W)	69.2	7.6	69.3	7.3	68.7	5.9	69.8	9	69.8	8.2
7 mtr./22.96 ft. (BL)	69.1	7.6	69.1	7.3	68.4	5.9	69.6	9	69.4	6.6
8 mtr./26.24 ft. (BL/W)	69	7.6	69	7.3	68.3	5.9	69.3	7.8		
9 mtr./29.52 ft. R	69	7.6	68.9	7.2	67.1	3.6	68.1	5.8		
10 mtr./32.80 ft. (W)	68.9	7.6	68.8	6.8	67.1	3.4	67.6	3.2		
11 mtr./36.00 ft. (BL)	68.8	7.6	68.6	6.4	67	3.2				
12 mtr./39.36 ft.(BL/BL)	68.7	7.4	67.9	4.6	66.9	3				
13 mtr./42.64 ft. R	68.2	7.2	67.7	3.9						
14 mtr./45.92 ft. (W)	67	6.9	67.1	1.9						
15 mtr./49.20 ft. (BL)	66.9	2.6	67	1.8						
16 mtr./52.48 ft. (BL/R)	66.8	2.1								
17 mtr./55.76 ft. R	66.7	2								
18 mtr./59.04 ft. (W)										
19 mtr./62.32 ft. (BL)										
20 mtr./65.60 ft. (BL/W)										
21 mtr./68.88 ft. R										
22 mtr./72.16 ft. (W)										
BOTTOM TEMPS	66.7 F		67 F		66.9 F		67.6 F		69.4 F	

Lake Level: 6740.2

Down: 3

**Big Bear Lake
Limnological Monitoring**

Taken By: 308 Date: 8/16/2012

STATION	1		2		3		4		5			
	TIME	8:45	9:30	10:05	10:50	11:15	SECCI	9	9	8	6	
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn				Med Grn	Med Grn	
SKY	Prtly Cloudy	Mstly Cloudy	Mstly Cloudy	Mstly Cloudy	Mstly Clidy	Prtly Cloudy				Prtly Cloudy	Prtly Cloudy	
WIND SPEED (kts)	2.5	2.5	2.5	2.5	Calm	4				4	3.5	
WIND DIRECTION	E	E	E	E		W				W	W	
DEPTH IN METERS/FEET	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.
SURFACE	69.5F	8.6	70F	8.2	70.4F	10.2	71.1F	9.3	72F	9.1	72F	9.1
1 mtr./3.28 ft. R	69.5	8.6	70	8.2	70.4	10.2	71.1	9.3	72	9.1	72	9.1
2 mtr./6.56 ft. (W)	69.5	8.3	69.8	8.5	70.3	10.2	70.8	9.4	71.1	8.7	71.1	8.7
3 mtr./9.84 ft. (BL)	69.5	8.2	69.7	8.5	70.2	10.2	70.7	9.6	71.1	8.7	71.1	8.7
4 mtr./13.12 ft. (BL/R)	69.5	8.1	69.7	8.8	70.1	10.2	70.6	9.6	71	9.7	71	9.7
5 mtr./16.40 ft. R	69.5	8.1	69.7	8.5	70	10.3	70.6	9.8	70.9	9.3	70.9	9.3
6 mtr./19.68 ft. (W)	69.4	7.9	69.7	8.4	69.7	9.2	70.5	9.8	70.6	7.4	70.6	7.4
7 mtr./22.96 ft. (BL)	69.4	7.8	69.6	8.3	69.2	6.3	70.4	9.5	70.1	5.7	70.1	5.7
8 mtr./26.24 ft. (BL/W)	69.4	7.7	69.6	8.4	68.5	4.5	69.7	7.4				
9 mtr./29.52 ft. R	69.3	7.7	69.4	8.4	67.5	3	68.6	3.4				
10 mtr./32.80 ft. (W)	69.2	7.5	69.3	8	67.5	2.9	68.2	3.2				
11 mtr./36.00 ft. (BL)	69.2	7.4	69	7.4	67.3	2.8						
12 mtr./39.36 ft.(BL/BL)	69.1	7.3	68.1	4.6	67	2.8						
13 mtr./42.64 ft. R	68.6	6.2	67.8	3.6								
14 mtr./45.92 ft. (W)	67.3	2.5	67.6	3								
15 mtr./49.20 ft. (BL)	66.9	2	66.9	2.5								
16 mtr./52.48 ft. (BL/R)	66.6	2										
17 mtr./55.76 ft. R	66.4	2										
18 mtr./59.04 ft. (W)	65.9	1.9										
19 mtr./62.32 ft. (BL)	65.4	2										
20 mtr./65.60 ft. (BL/W)												
21 mtr./68.88 ft. R												
22 mtr./72.16 ft. (W)												
BOTTOM TEMPS	65.4F	66.9F	67F	68.2F	70.1F							

Lake Level: 6740.3

Down: 2.94

**Big Bear Lake
Limnological Monitoring**

Taken By: 309 Date: 8/22/1012

STATION	1			2			3			4			5			
	TIME	TEMP	D.O.	TIME	TEMP	D.O.	TIME	TEMP	D.O.	TIME	TEMP	D.O.	TIME	TEMP	D.O.	
	8:50			8:15			9:35			10:10			10:40			
SECCI	8'			9'			9'			7'			5'			
WATER COLOR	Med Grn			Med Grn			Med Grn			Med Grn			Med Grn			
SKY	100% Overcast			100 Overcast%			100% Overcast			100% Overcast			100% Overcast			
WIND SPEED (kts)	2.8			2.6			6			7.1			7.8			
WIND DIRECTION	W			SE			W			NW			NW			
DEPTH IN METERS/FEET	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.
SURFACE	69.6	8.9	69.9	9.5	70.9	7.5	70.9	7.5	71.6	15	71.6	15	71.8	13.6	71.8	13.6
1 mtr./3.28 ft. R	69.6	8.9	69.9	9.1	70.8	7.5	70.8	7.5	71.6	15	71.6	15	71.8	13.6	71.8	13.6
2 mtr./6.56 ft. (W)	69.6	8.9	69.9	9.1	70.8	7.5	70.8	7.5	71.6	14.9	71.6	14.9	71.7	13.6	71.7	13.6
3 mtr./9.84 ft. (BL)	69.5	8.9	69.8	9.1	70.8	7.5	70.8	7.5	71.5	13.2	71.5	13.2	71.7	12.8	71.7	12.8
4 mtr./13.12 ft. (BL/R)	69.5	8.9	69.8	9	70.7	7.5	70.7	7.5	71.5	13.2	71.5	13.2	71.7	12.8	71.7	12.8
5 mtr./16.40 ft. R	69.5	8.9	69.8	9	70.5	7.3	70.5	7.3	71.5	13	71.5	13	71.6	12.8	71.6	12.8
6 mtr./19.68 ft. (W)	69.5	8.9	69.3	8.1	70.4	7.3	70.4	7.3	71.5	12.8	71.5	12.8	71.6	12.8	71.6	12.8
7 mtr./22.96 ft. (BL)	69.5	8.9	69.2	8	69.5	6.2	69.5	6.2	71.1	12.1	71.1	12.1	71.6	12.8	71.6	12.8
8 mtr./26.24 ft. (BL/W)	69.3	8.9	69.2	7.9	68.9	5	68.9	5	70	8.9	70	8.9				
9 mtr./29.52 ft. R	69.3	8.9	69.1	7.4	68.2	4.3	68.2	4.3	69.7	7.2	69.7	7.2				
10 mtr./32.80 ft. (W)	69.2	8.9	69.1	7.3	67.5	4.3	67.5	4.3	68.9	5.6	68.9	5.6				
11 mtr./36.00 ft. (BL)	69	8.8	69	7.2	67.5	4.3	67.5	4.3								
12 mtr./39.36 ft.(BL/BL)	69	8.8	68.5	4.2	67.4	4.3	67.4	4.3								
13 mtr./42.64 ft. R	68.7	8.6	68.1	2.4												
14 mtr./45.92 ft. (W)	67.8	4.9	67.7	2.4												
15 mtr./49.20 ft. (BL)	67.4	3.7	67.6	2.3												
16 mtr./52.48 ft. (BL/R)	67.3	3.7														
17 mtr./55.76 ft. R	67	3.7														
18 mtr./59.04 ft. (W)																
19 mtr./62.32 ft. (BL)																
20 mtr./65.60 ft. (BL/W)																
21 mtr./68.88 ft. R																
22 mtr./72.16 ft. (W)																
BOTTOM TEMPS	67 F		67.6 F		67.4 F		68.9		67.6 F		68.9		71.6 F		71.6 F	

Lake Level: 6740.1

Big Bear Lake
Limnological Monitoring

Down: 3.07

Taken By: 309 Date: 8/29/2012

STATION	1		2		3		4		5	
	TIME	8:20	9:00	9:30	10:45	10:30	10:45	10:30	10:30	5'
SECCI	9'	9'	9'	9'	8'	8'	8'	8'	8'	5'
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn
SKY	Clear	Partly Cloudy	Partly Cloudy	Partly Cloudy	Partly Cloudy	Partly Cloudy	Partly Cloudy	Partly Cloudy	Partly Cloudy	Partly Cloudy
WIND SPEED (kts)	2.4	6.1	12.9	12.9	5.1	5.1	5.1	5.1	5.1	1.6
WIND DIRECTION	SE	NW	NW	NW	SE	SE	SE	SE	SE	SE
DEPTH IN METERS/FEET	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.
SURFACE	68.8	7.3	69.2	6.3	69.7	6.5	70.6	7	70.9	7.5
1 mtr./3.28 ft. R	68.8	6.9	69.2	6.2	69.6	6.5	70.5	7	70.9	7.5
2 mtr./6.56 ft. (W)	68.7	6.7	69	6.2	69.6	6.5	70.5	7	70.9	7.5
3 mtr./9.84 ft. (BL)	68.6	6.4	69	6.2	69.5	6.4	70.3	7	70.7	7.4
4 mtr./13.12 ft. (BL/R)	68.5	6.1	69	6.1	69.4	6.4	70.2	6.7	70.6	7.4
5 mtr./16.40 ft. R	68.5	5.9	68.9	6.1	69.4	6.3	70.2	6.5	70.6	7.2
6 mtr./19.68 ft. (W)	68.5	5.9	68.8	6.1	69.4	6.3	70.2	6.4	70.5	7.2
7 mtr./22.96 ft. (BL)	68.5	5.9	68.6	5.6	69.4	6.2	70.1	6.4	70.4	7.2
8 mtr./26.24 ft. (BL/W)	68.5	5.9	68.5	5.6	68.8	4.2	70.1	6.4		
9 mtr./29.52 ft. R	68.4	5.8	68.4	5.6	68.4	2.5	69.3	4.9		
10 mtr./32.80 ft. (W)	68.3	5.5	68.4	5.6	68.2	1.5	69.3	4.7		
11 mtr./36.00 ft. (BL)	68.3	5.2	68.4	5.6	68.1	0.6				
12 mtr./39.36 ft.(BL/BL)	68.3	5.2	68.3	4.6	68	0.3				
13 mtr./42.64 ft. R	68.2	5.2	68.1	3.3						
14 mtr./45.92 ft. (W)	68.2	5	68	1.1						
15 mtr./49.20 ft. (BL)	68.2	4.3	68	0.7						
16 mtr./52.48 ft. (BL/R)	68.1	4.2								
17 mtr./55.76 ft. R	68.1	3.8								
18 mtr./59.04 ft. (W)										
19 mtr./62.32 ft. (BL)										
20 mtr./65.60 ft. (BL/W)										
21 mtr./68.88 ft. R										
22 mtr./72.16 ft. (W)										
BOTTOM TEMPS	68.1F	68 F	68 F	68 F	69.3 F	68 F	69.3 F	68 F	69.3 F	70.4 F

Lake Level:6740.0

Down: 3.25

**Big Bear Lake
Limnological Monitoring**

Taken By: 309 Date: 9/12/2012

STATION	1		2		3		4		5	
	TIME	8:30	8:00	9:20	9:50	10:15	TEMP	D.O.	TEMP	D.O.
SECCI	9'	8'	8'	8'	8'	5'				
WATER COLOR	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn	Med Grn				
SKY	Clear	100% Fog	Clear	Clear	Clear	Clear				
WIND SPEED (kts)	4,7	6.1	1.3	7.4	7.4	8.2				
WIND DIRECTION	SE	SE	SE	SE	SE	SE				
DEPTH IN METERS/FEET	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.
SURFACE	68.3	6.8	68.3	6.8	68.8	6.9	69.1	7.2	69.1	7.2
1 mtr./3.28 ft. R	68.3	6.7	68.3	6.6	68.8	6.9	69.1	7.2	69	7.2
2 mtr./6.56 ft. (W)	68.3	6.7	68.3	6.5	68.7	6.8	68.8	7.2	68.8	6.9
3 mtr./9.84 ft. (BL)	68.3	6.6	68.3	6.5	68.6	6.7	68.7	7	68.7	6.9
4 mtr./13.12 ft. (BL/R)	68.3	6.6	68.3	6.5	68.6	6.6	68.7	7	68.7	6.9
5 mtr./16.40 ft. R	68.2	6.6	68.3	6.5	68.6	6.5	68.6	6.9	68.7	6.9
6 mtr./19.68 ft. (W)	68.2	6.6	68.3	6.5	68.6	6.4	68.6	6.8	68.6	6.8
7 mtr./22.96 ft. (BL)	68.2	6.6	68.3	6.5	68.6	6.4	68.6	6.8	68.5	6.8
8 mtr./26.24 ft. (BL/W)	68.2	6.6	68.3	6.4	68.5	6.4	68.5	6.6		
9 mtr./29.52 ft. R	68.2	6.5	68.2	6.4	68.4	6.1	68.5	6.5		
10 mtr./32.80 ft. (W)	68.2	6.4	67.9	5.7	67.4	2.2	68.5	6.5		
11 mtr./36.00 ft. (BL)	68.2	6.4	67.7	5.3	67.4	2.1				
12 mtr./39.36 ft.(BL/BL)	68.1	6.4	67.7	5.3	67.4	2.1				
13 mtr./42.64 ft. R	68.1	6.4	67.6	4.7						
14 mtr./45.92 ft. (W)	68	6.4	67.6	4.4						
15 mtr./49.20 ft. (BL)	67.7	4.8	67.4	3.4						
16 mtr./52.48 ft. (BL/R)	67.6	4.3								
17 mtr./55.76 ft. R	67.6	4.2								
18 mtr./59.04 ft. (W)										
19 mtr./62.32 ft. (BL)										
20 mtr./65.60 ft.(BL/W)										
21 mtr./68.88 ft. R										
22 mtr./72.16 ft. (W)										
BOTTOM TEMPS	67.6 F	67.4 F	67.4 F	67.4 F	67.4 F	68.5 F	68.5 F	68.5 F	68.5 F	68.5 F

Lake Level: 6739.6

Down: 3.6

**Big Bear Lake
Limnological Monitoring**

Taken By: 308 Date: 10/2/2012

STATION	1			2			3			4			5							
	TIME	SECCI	WATER COLOR	SKY	WIND SPEED (kts)	WIND DIRECTION	TEMP	D.O.	DEPTH IN METERS/FEET	TEMP	D.O.	DEPTH IN METERS/FEET	TEMP	D.O.	DEPTH IN METERS/FEET	TEMP	D.O.	DEPTH IN METERS/FEET	TEMP	D.O.
	9:40	9	Med Grn	Clr	Calm		66F	8.1	SURFACE	66.2F	8.2	65.2F	8	65F	7.2	64.1	7.1	11:45		
1 mtr./3.28 ft. R						66	8.1			66.2	8.2	65.2	8	65	7.2	64.1	7.1			
2 mtr./6.56 ft. (W)						65.9	8			65.8	8	65.1	7.9	64.5	6.9	63.7	7			
3 mtr./9.84 ft. (BL)						65.8	7.7			65.8	8	65	7.8	64.4	6.9	63.6	7			
4 mtr./13.12 ft. (BL/R)						65.7	7.6			65.7	8	64.9	7.6	64.4	7.1	63.5	7.1			
5 mtr./16.40 ft. R						65.6	7.5			65.3	6.8	64.9	7.6	64.4	6.9	63.4	7.1			
6 mtr./19.68 ft. (W)						65	5.7			65.7	6.4	64.9	7.5	64.3	6.9	63	7			
7 mtr./22.96 ft. (BL)						64.8	5.5			65	6	64.8	7.5	64.2	6.7					
8 mtr./26.24 ft. (BL/W)						64.8	5.4			64.7	5.5	64.8	7.4	64	6.8					
9 mtr./29.52 ft. R						64.8	5.1			64.7	5	64.8	7.5	64	6.5					
10 mtr./32.80 ft. (W)						64.7	5.1			64.7	4.6	64.7	7.5							
11 mtr./36.00 ft. (BL)						64.7	4.8			64.6	4	64.7	6.4							
12 mtr./39.36 ft.(BL/BL)						64.7	4.8			64.6	3.8									
13 mtr./42.64 ft. R						64.7	4.5			64.5	5									
14 mtr./45.92 ft. (W)						64.7	4.5			64.5	5.5									
15 mtr./49.20 ft. (BL)						64.6	4.4													
16 mtr./52.48 ft. (BL/R)						64.6	3.6													
17 mtr./55.76 ft. R						64.6	2.7													
18 mtr./59.04 ft. (W)						64.5	0.8													
19 mtr./62.32 ft. (BL)																				
20 mtr./65.60 ft. (BL/W)																				
21 mtr./68.88 ft. R																				
22 mtr./72.16 ft. (W)																				
BOTTOM TEMPS						64.5F				64.5F		64.7F		64F		63F				

LAKE LEVEL: 6739.4
DOWN: 3.8

Big Bear Lake
Limnological Monitoring

TAKEN BY: 308

DATE: 10/08/2012

All stations are at mid lake											
STATION	1 = Boom Line	2 = Papoose	3 = West Ramp	4 = Observatory	5 = Juniper Point						
TIME	9:20	10:00	10:25	10:50	11:10						
SECCHI	6	6	7	5	6						
WATER COLOR	Med Green	Med Green	Med Green	Med Green	Med Green						
SKY	Clr	Clr	Clr	Clr	Clr						
WIND SPEED (kts)	6.3	6.3	9.5	5.8	6.3						
WIND DIRECTION	W	W	W	W	W						
DEPTH IN METERS/FEET	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	TEMP	D.O.	
SURFACE TEMP	62.3° F		62.4° F		62.7° F		62.7° F		62.8° F		
1 mtr./3.28 ft. R	62.3	7	62.4	7.4	62.7	7.7	62.7	7.8	62.8	8	
2 mtr./6.56 ft. (W)	62.3	6.7	62.4	7.1	62.7	7.6	62.6	7.7	62.7	8.1	
3 mtr./9.84 ft. (BL)	62.3	6.6	62.4	7	62.7	7.5	62.5	7.6	62.6	7.9	
4 mtr./13.12 ft. (BL/R)	62.3	6.5	62.4	7	62.7	7.4	62.5	7.5	62.5	7.7	
5 mtr./16.40 ft. R	62.3	6.5	62.4	6.8	62.7	7.3	62.4	7.5	62.5	7.8	
6 mtr./19.68 ft. (W)	62.3	6.5	62.3	6.8	62.6	7.3	62.4	7.5	62.3	7.9	
7 mtr./22.96 ft. (BL)	62.3	6.5	62.3	6.8	62.6	7.3	62.4	7.4			
8 mtr./26.24 ft. (BL/W)	62.3	6.6	62.3	6.8	62.5	7.3	62.4	7.4			
9 mtr./29.52 ft. R	62.3	6.6	62.3	6.7	62.4	7.3					
10 mtr./32.80 ft. (W)	62.3	6.6	62.3	6.6	62.3	7.3					
11 mtr./36.00 ft. (BL)	62.3	6.5	62.2	6.6	62.3	7.3					
12 mtr./39.36 ft.(BL/BL)	62.3	6.5	62.2	6.6							
13 mtr./42.64 ft. R	62.3	6.5	62.2	6.6							
14 mtr./45.92 ft. (W)	62.3	6.4	62.2	6.6							
15 mtr./49.20 ft. (BL)	62.2	6.5									
16 mtr./52.48 ft. (BL/R)	62.2	6.4									
17 mtr./55.76 ft. R	62.2	6.4									
18 mtr./59.04 ft. (W)	62.2	5.4									
19 mtr./62.32 ft. (BL)											
20 mtr./65.60 ft. (BL/W)											
21 mtr./68.88 ft. R											
22 mtr./72.16 ft. (W)											
BOTTOM TEMP	62.2° F		62.2° F		62.3° F		62.3° F		62.3° F		