

### Dissolved Oxygen (mg / L)

	25-Apr	10-May	1-Jun	28-Jun	7-Jul	13-Jul	2-Aug	9-Aug	14-Aug	26-Aug	5-Sep	10-Sep	25-Sep
0	11.0	10.2	8.7	8.6	8.0	8.6	7.6	6.8	9.0	7.6	8.4	10.3	8.4
1	10.7	10.4	8.4	8.6	8.1	8.5	7.8	6.9	9.5	7.6	8.5	10.3	8.9
2	10.8	10.7	9.4	8.8	7.9	8.2	7.7	6.8	9.7	7.5	8.2	10.2	8.7
3	10.9	10.8	9.1	8.5	7.6	8.5	6.7	6.9	9.1	7.0	7.6	9.7	8.8
4	10.5	11.4	9.5	8.3	6.9	6.8	4.3	6.8	8.9	6.9	7.2	8.7	8.3
5	10.7	11.0	10.2	7.7	5.3	4.1	1.4	0.4	8.6	3.4	6.5	7.8	7.8
6	10.8	11.0	8.9	6.9	4.6	3.9	2.3	1.5	2.4	1.2	5.9	7.3	7.5
7	10.5	10.7	7.5	6.1	4.6	4.1	2.8	1.8	2.0	1.4	2.5	5.5	6.4
8	10.5	10.5	7.3	5.7	4.3	4.2	2.8	1.8	1.7	1.1	2.4	4.6	4.8
9	10.8	10.2	7.7	6.1	4.4	4.0	2.7	1.7	1.6	0.9	2.3	2.1	3.0
10	10.4	10.0	6.9	5.5	3.8	3.3	2.6	1.4	1.3	0.7	0.7	0.6	0.8
11	10.2	10.1	6.4	5.0	2.8	3.0	2.0	1.0	0.7	0.6	0.7	0.5	0.5
12	10.3	9.8	6.3	4.2	2.9	1.8	1.0	0.6	0.7	0.6	0.6	0.5	0.5
13	9.9	9.2	5.4	3.1	1.6	0.5	1.0	0.5	0.7	0.6	0.6	0.5	0.5
14	9.5	8.4	3.8	1.6	0.5	0.4	0.9	0.5	0.8	0.6	0.7	0.5	0.5

### % Dissolved Oxygen Saturation

	25-Apr	10-May	1-Jun	28-Jun	7-Jul	13-Jul	2-Aug	9-Aug	14-Aug	26-Aug	5-Sep	10-Sep	25-Sep
0	103	103	101	102	94	104	98	83	108	89	90	114	89
1	99	105	97	101	95	103	100	83	113	88	91	114	95
2	99	107	106	102	92	100	98	83	115	87	88	113	93
3	99	107	96	99	89	103	84	83	108	82	82	107	94
4	96	113	100	93	80	80	52	82	105	81	77	95	88
5	98	109	103	81	58	45	15	5	101	39	69	84	83
6	98	106	100	78	54	41	14	4	90	36	69	83	83
7	98	101	86	68	45	39	23	15	24	12	61	78	79
8	94	97	71	60	45	40	27	18	20	15	25	57	67
9	90	93	69	55	41	41	27	17	17	11	24	47	50
10	91	88	71	58	41	38	26	17	15	9	23	21	31
11	86	86	62	51	36	30	25	14	12	6	7	5	7
12	84	85	56	45	26	27	18	9	7	6	6	5	5
13	84	81	55	37	26	16	9	5	6	6	6	5	5
14	77	69	32	14	5	4	8	4	7	5	6	5	4

**Aerobic conditions were maintained to 10m deep (32 ft) throughout the summer.**

## Temperature (° C)

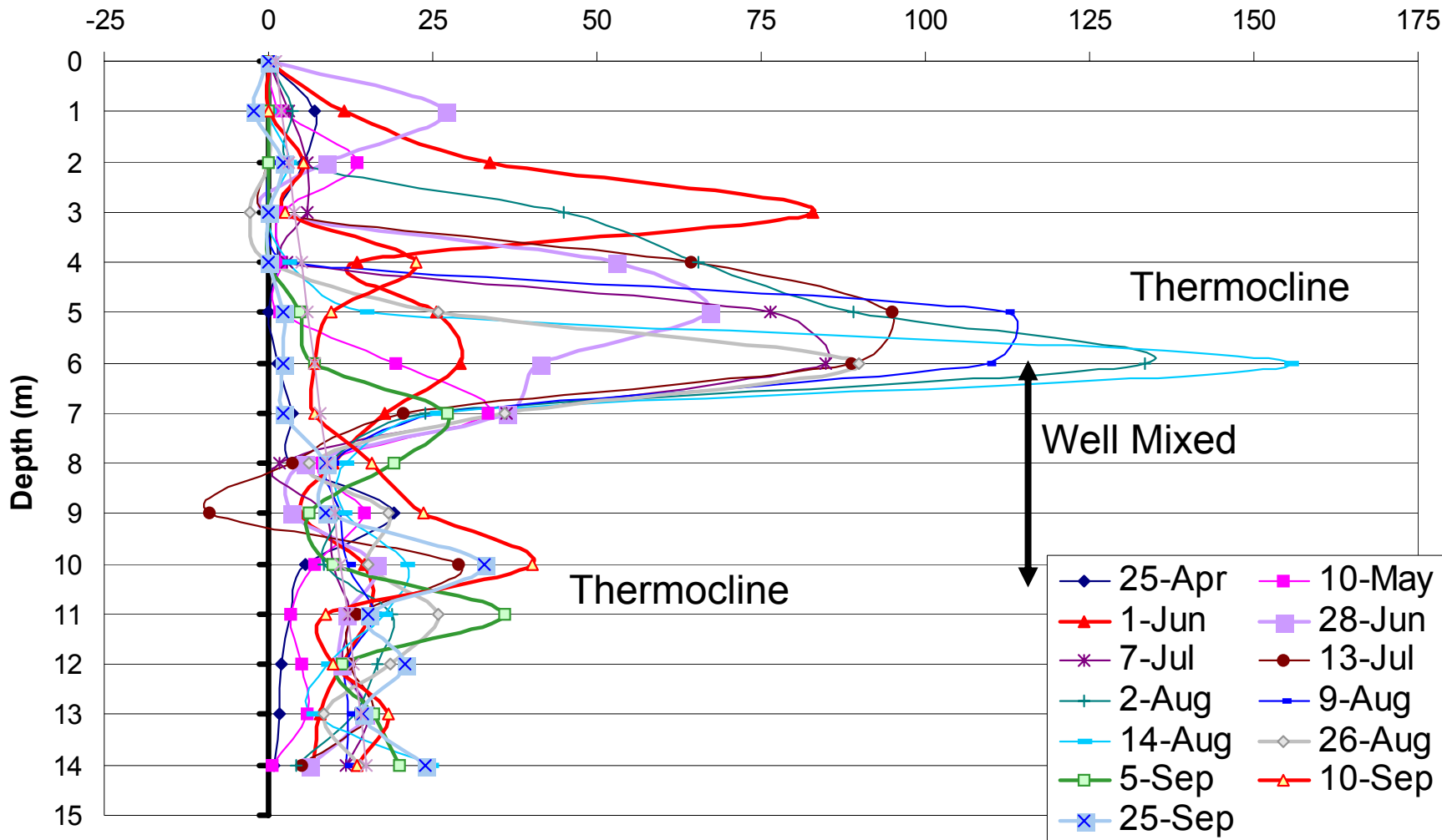
	25-Apr	10-May	1-Jun	28-Jun	7-Jul	13-Jul	2-Aug	9-Aug	14-Aug	26-Aug	5-Sep	10-Sep	25-Sep
0	12.3	16.0	23.0	24.0	23.4	25.2	28.4	25.3	24.1	22.8	19.0	20.4	18.3
1	11.8	15.9	22.6	23.1	23.3	25.2	28.3	25.3	24.1	22.8	19.0	20.4	18.4
2	11.4	15.2	21.4	22.8	23.1	25.2	28.2	25.3	24.0	22.8	19.0	20.2	18.3
3	11.3	15.1	18.1	22.8	22.9	25.2	26.9	25.3	24.0	22.9	19.0	20.1	18.3
4	11.2	15.0	17.5	20.9	22.8	23.1	24.9	25.2	23.9	22.9	19.0	19.2	18.3
5	11.2	14.9	16.3	18.2	20.0	19.6	21.9	21.4	23.4	22.0	18.8	18.8	18.2
6	11.1	13.8	14.8	16.3	16.3	15.6	16.4	16.9	17.4	18.5	18.5	18.5	18.1
7	10.8	11.6	13.8	14.4	14.4	14.5	15.2	15.6	16.2	16.9	17.3	18.2	18.0
8	10.5	11.0	13.2	14.1	14.3	14.3	14.7	15.1	15.6	16.6	16.4	17.5	17.6
9	8.6	9.7	12.9	13.9	13.8	14.8	14.1	14.5	15.0	15.7	16.1	16.4	17.2
10	7.9	9.0	11.9	12.9	13.2	13.1	13.6	13.8	13.8	14.9	15.6	14.3	15.6
11	7.4	8.6	10.7	12.1	12.4	12.2	12.4	12.8	12.7	13.4	13.6	13.8	14.8
12	7.1	8.0	9.7	11.3	11.6	11.3	11.2	12.0	12.1	12.2	12.9	13.2	13.6
13	6.8	7.1	8.9	10.1	10.4	10.0	10.1	11.1	11.6	11.6	11.8	12.0	12.7
14	6.6	7.0	8.1	9.5	9.3	9.5	9.7	10.1	9.5	10.5	10.2	11.0	11.0

## RTRM

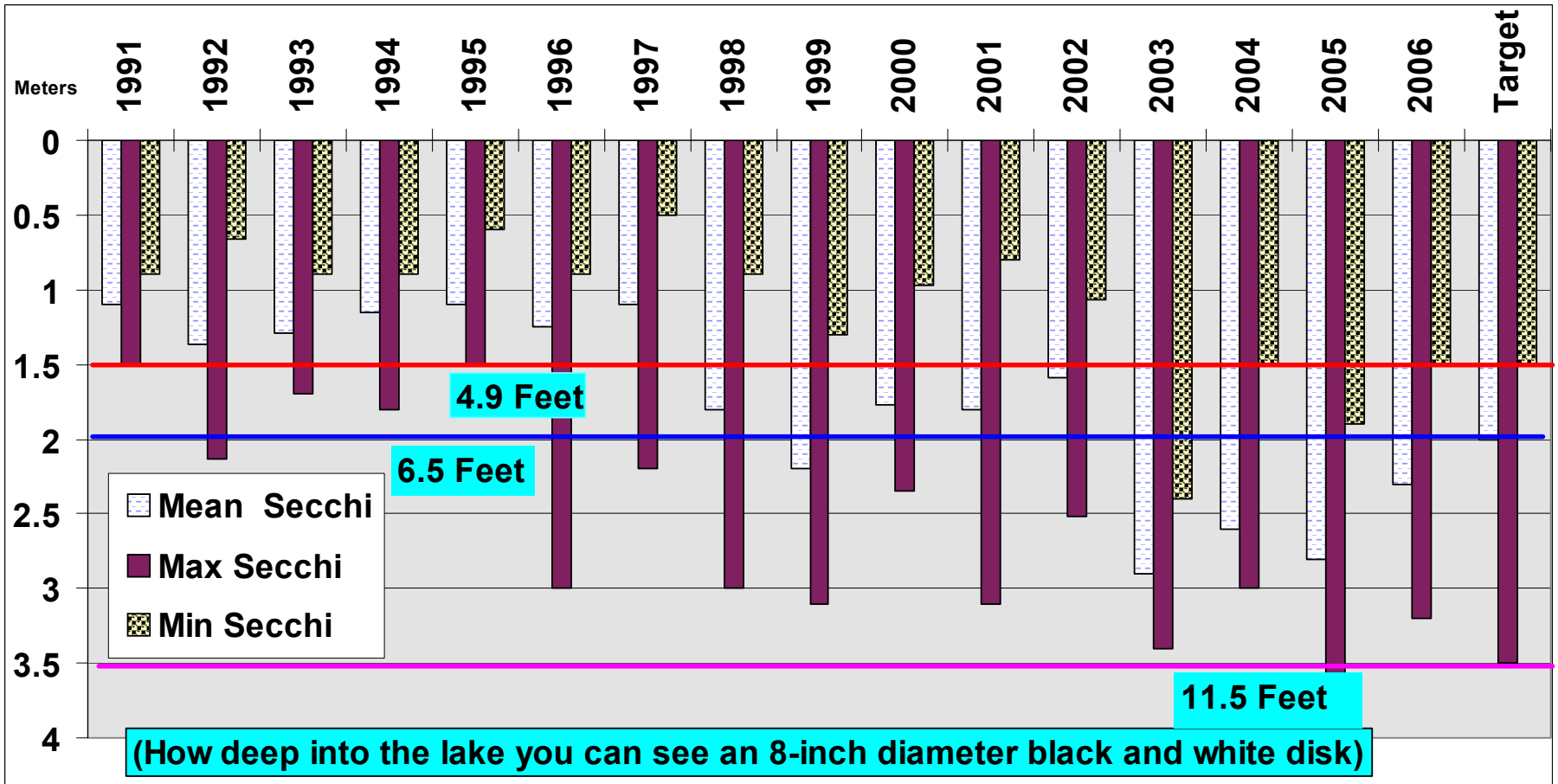
	25-Apr	10-May	1-Jun	28-Jun	7-Jul	13-Jul	2-Aug	9-Aug	14-Aug	26-Aug	5-Sep	10-Sep	25-Sep
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	7	2	11	27	3	0	4	0	0	0	0	0	-2
2	5	14	34	9	6	0	4	0	3	0	0	5	2
3	1	2	83	0	6	0	45	0	0	-3	0	3	0
4	1	2	13	53	3	64	65	3	3	0	0	22	0
5	0	2	26	67	76	95	89	112	15	26	5	10	2
6	1	19	29	41	85	89	134	109	156	90	7	7	2
7	4	33	18	36	36	21	24	26	25	36	27	7	2
8	4	8	10	5	2	4	9	10	12	6	19	16	9
9	19	15	5	3	9	-9	11	11	12	18	6	23	9
10	6	7	15	16	10	29	8	12	21	15	10	40	33
11	3	3	16	12	12	14	19	16	18	26	36	9	15
12	2	5	11	11	11	12	17	12	9	18	11	10	21
13	2	6	8	15	15	16	13	12	7	8	16	18	14
14	1	1	7	6	12	5	4	12	25	14	20	13	24
<b>SumRTRM</b>	<b>56</b>	<b>118</b>	<b>284</b>	<b>302</b>	<b>286</b>	<b>339</b>	<b>445</b>	<b>336</b>	<b>305</b>	<b>255</b>	<b>157</b>	<b>183</b>	<b>132</b>

**The Layer Aeration system maintained well-mixed conditions between 6-11 m. A strong thermocline developed at 5-6 m, with a second weaker thermocline at 10-12 m deep.**

### Culver Lake 2006 RTRM Profiles



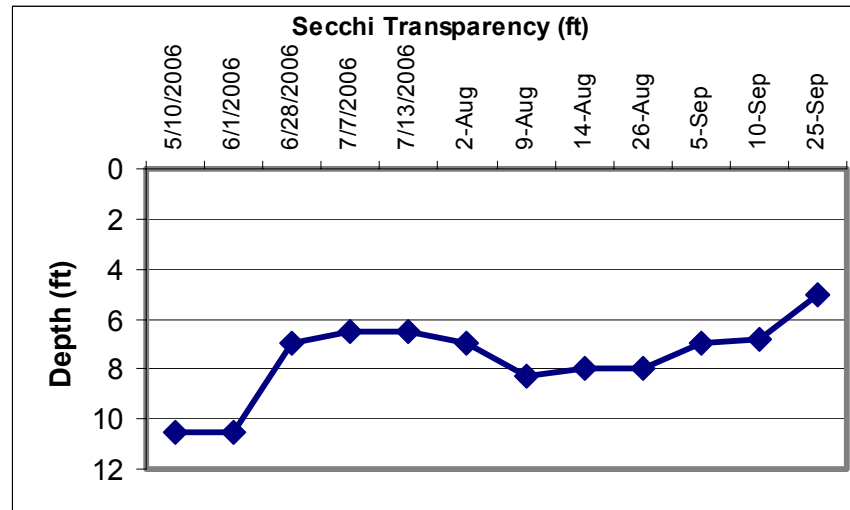
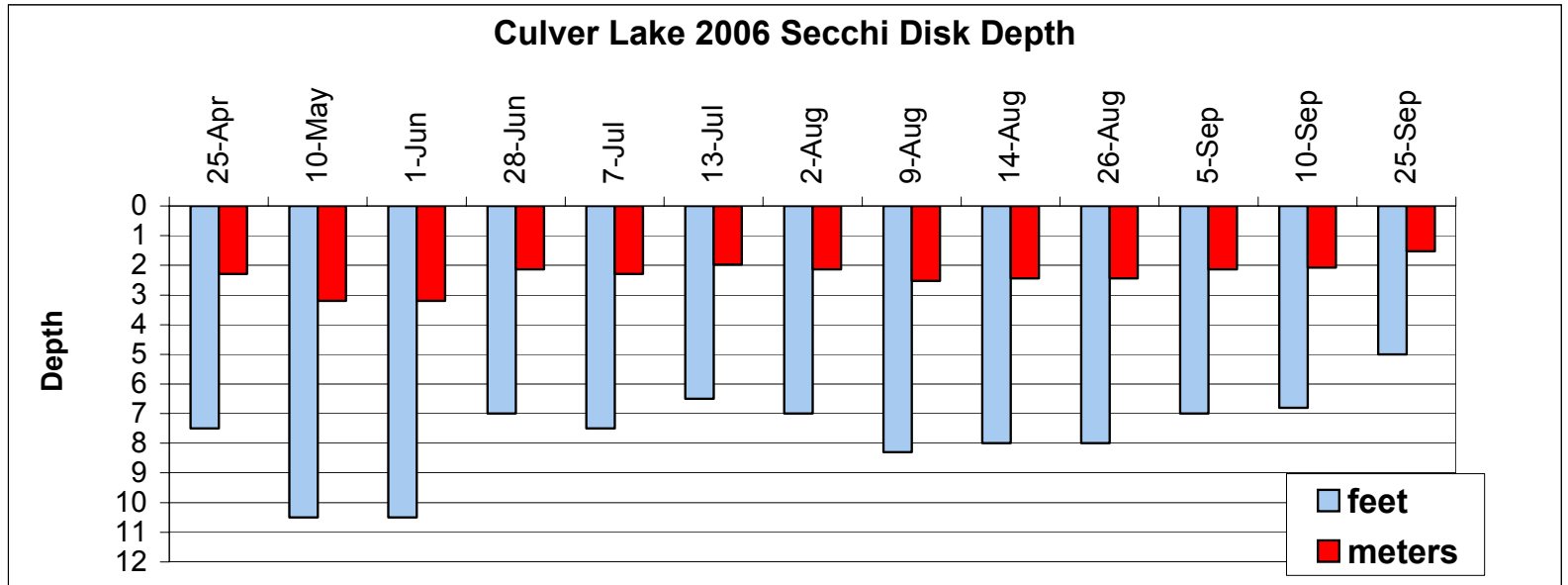
**The Layer Aeration system maintained well-mixed conditions between 6-11 m. A strong thermocline developed at 5-6 m, with a second weaker thermocline at 10-12 m deep.**



Lake transparency goals were met during 2006, although clarity was not quite as good as during 2005.

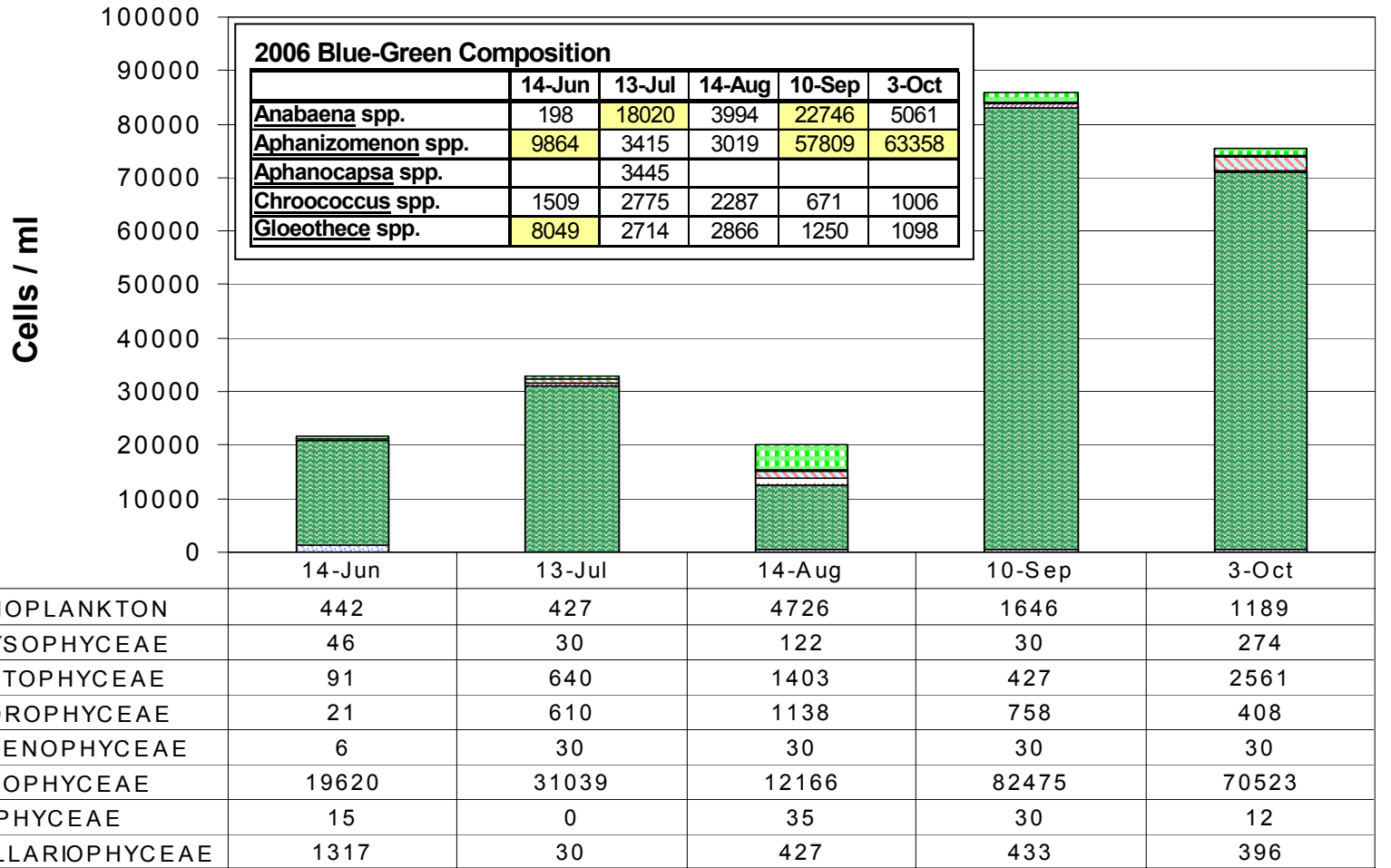
**Secchi Disk Depth (m)**

	25-Apr	10-May	1-Jun	28-Jun	7-Jul	13-Jul	2-Aug	9-Aug	14-Aug	26-Aug	5-Sep	10-Sep	25-Sep
feet	7.5	10.5	10.5	7	7.5	6.5	7	8.3	8	8	7	6.8	5
meters	2.3	3.2	3.2	2.1	2.3	2.0	2.1	2.5	2.4	2.4	2.1	2.1	1.5



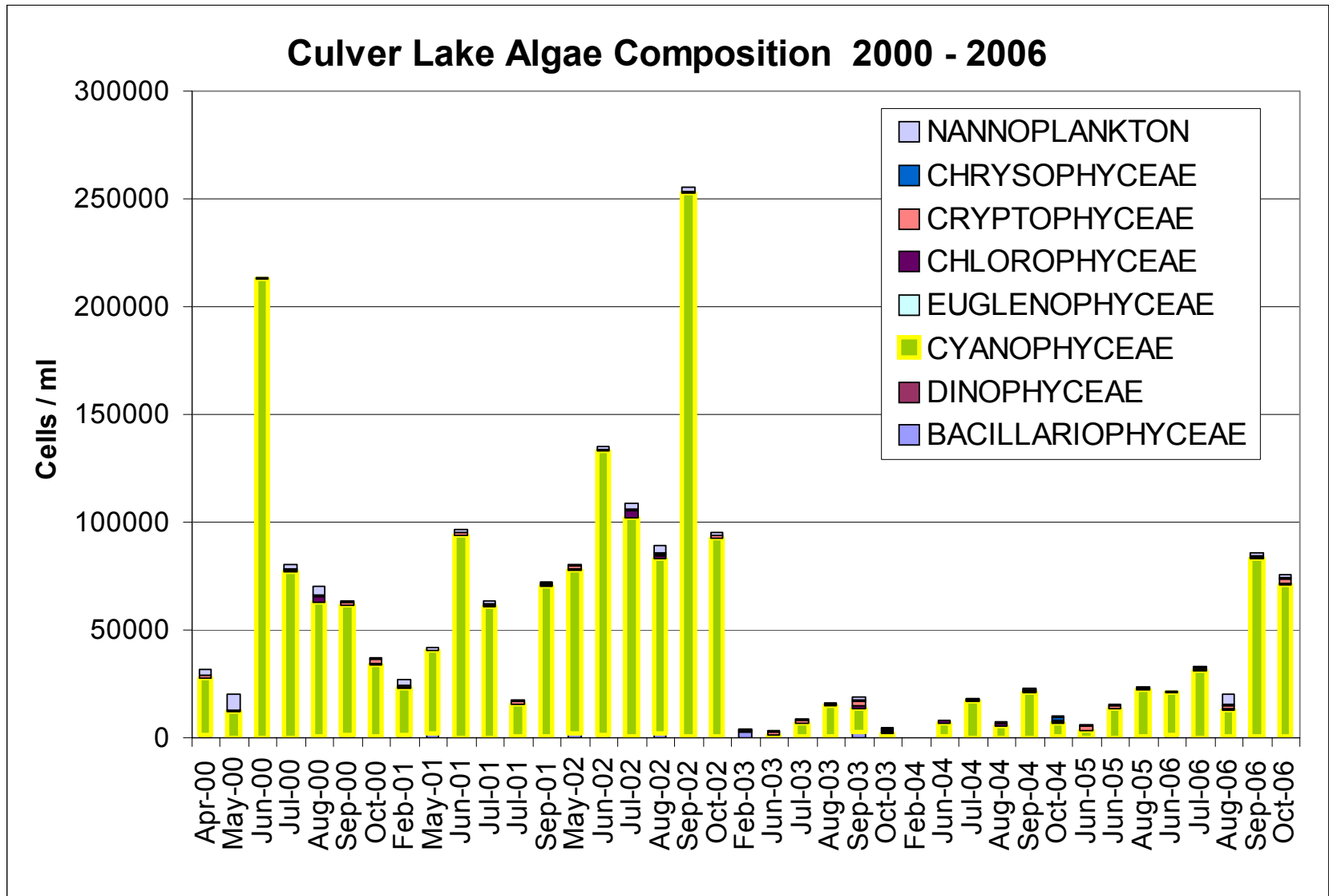
Transparency in April was approximately 7.5 ft, followed by a “clear water phase” in May and June (10-11 ft transparency). Transparency varied between 6-8 ft until the lake mixed in late September.

# Culver Lake 2006 Algae Results, Site 1

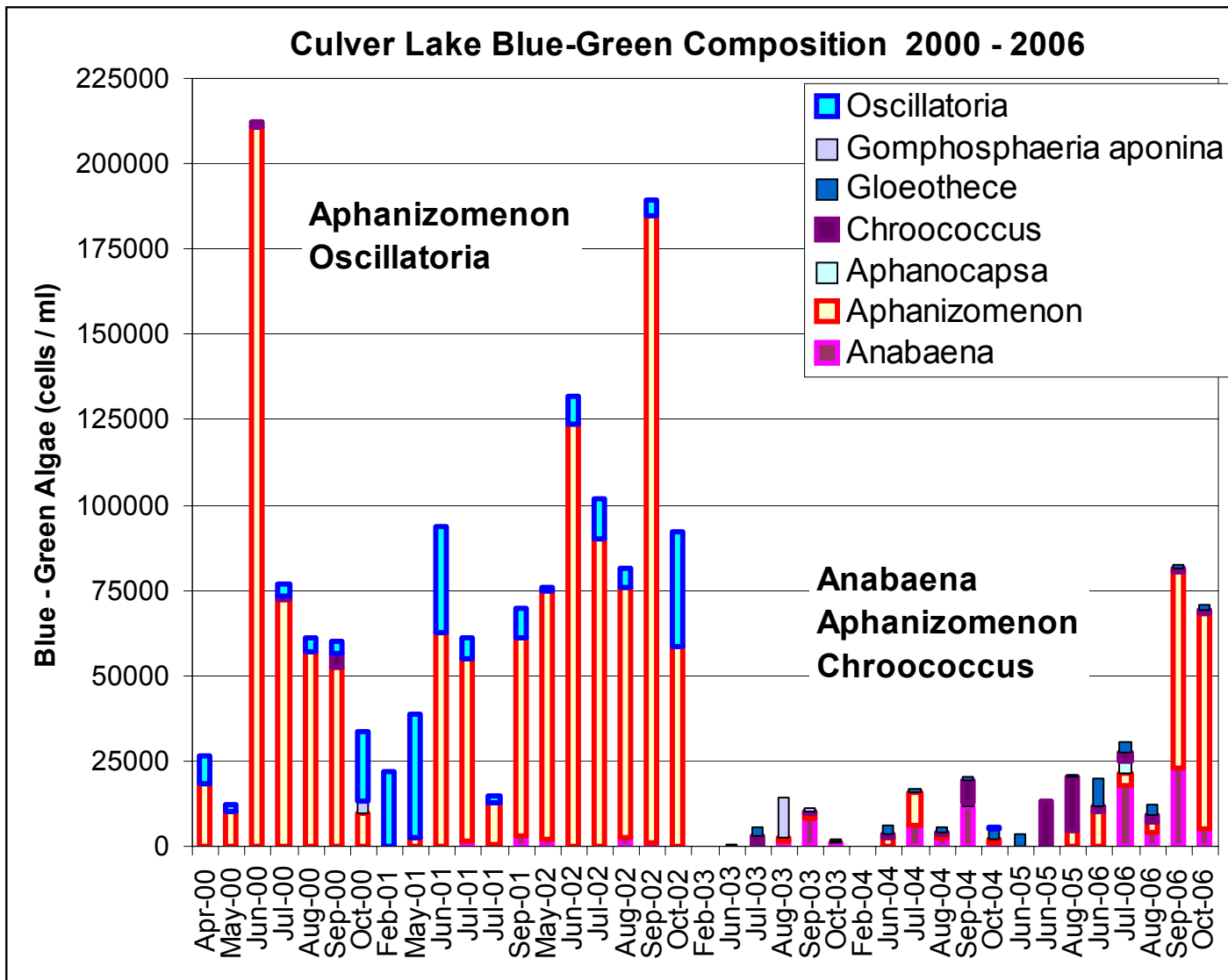


The phytoplankton community was dominated by bluegreen species during 2006. Cell densities were moderate through the summer, and increased abruptly in September. The Fall die-off of bluegreens caused more floating algae around the perimeter of the lake than had been observed during recent years.

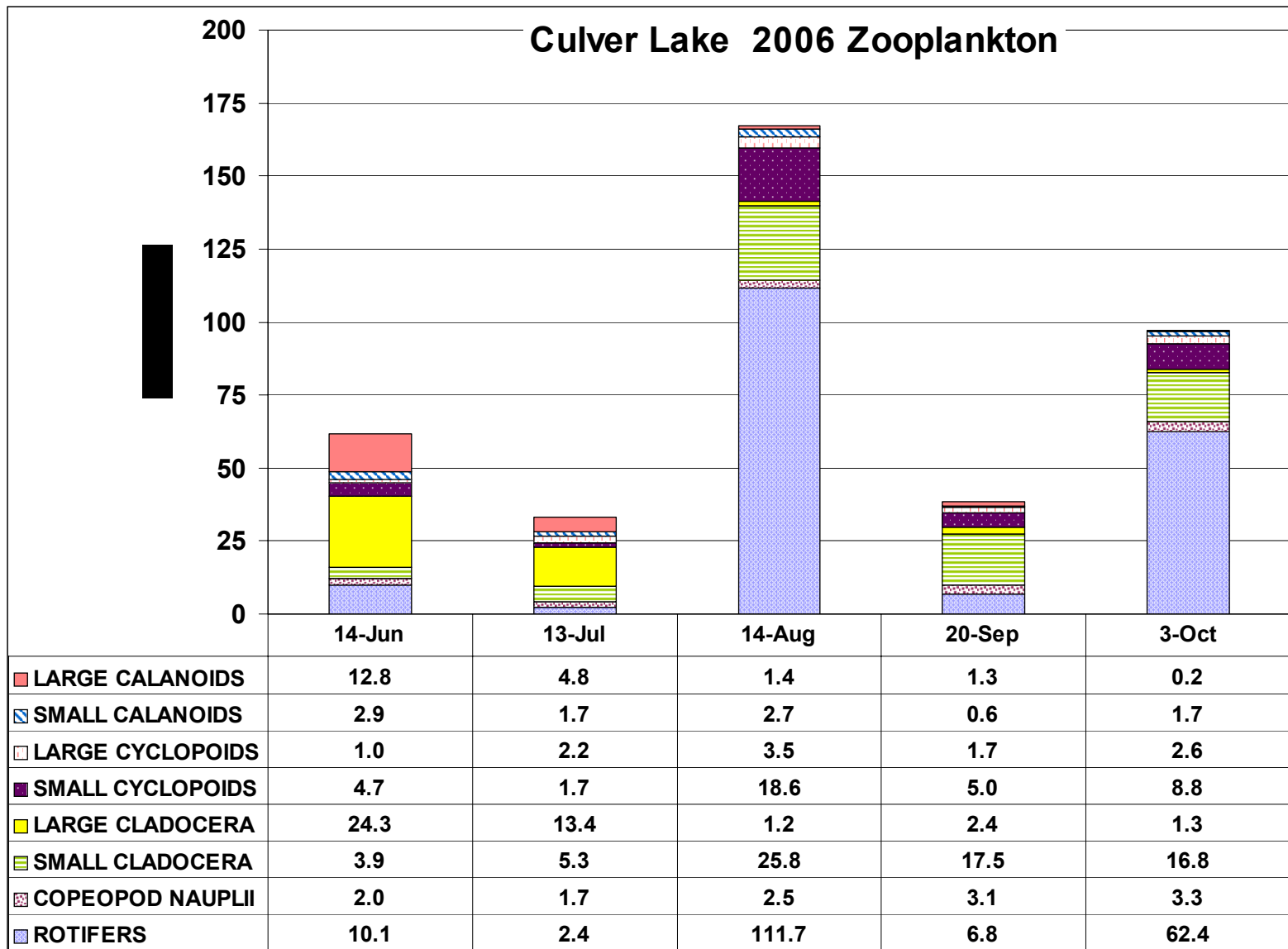
## Culver Lake Algae Composition 2000 - 2006



**Bluegreens continue to be the dominant phytoplankton. Although cell densities were higher in September 2006 than recent years, densities remained lower than during 2000-2002.**

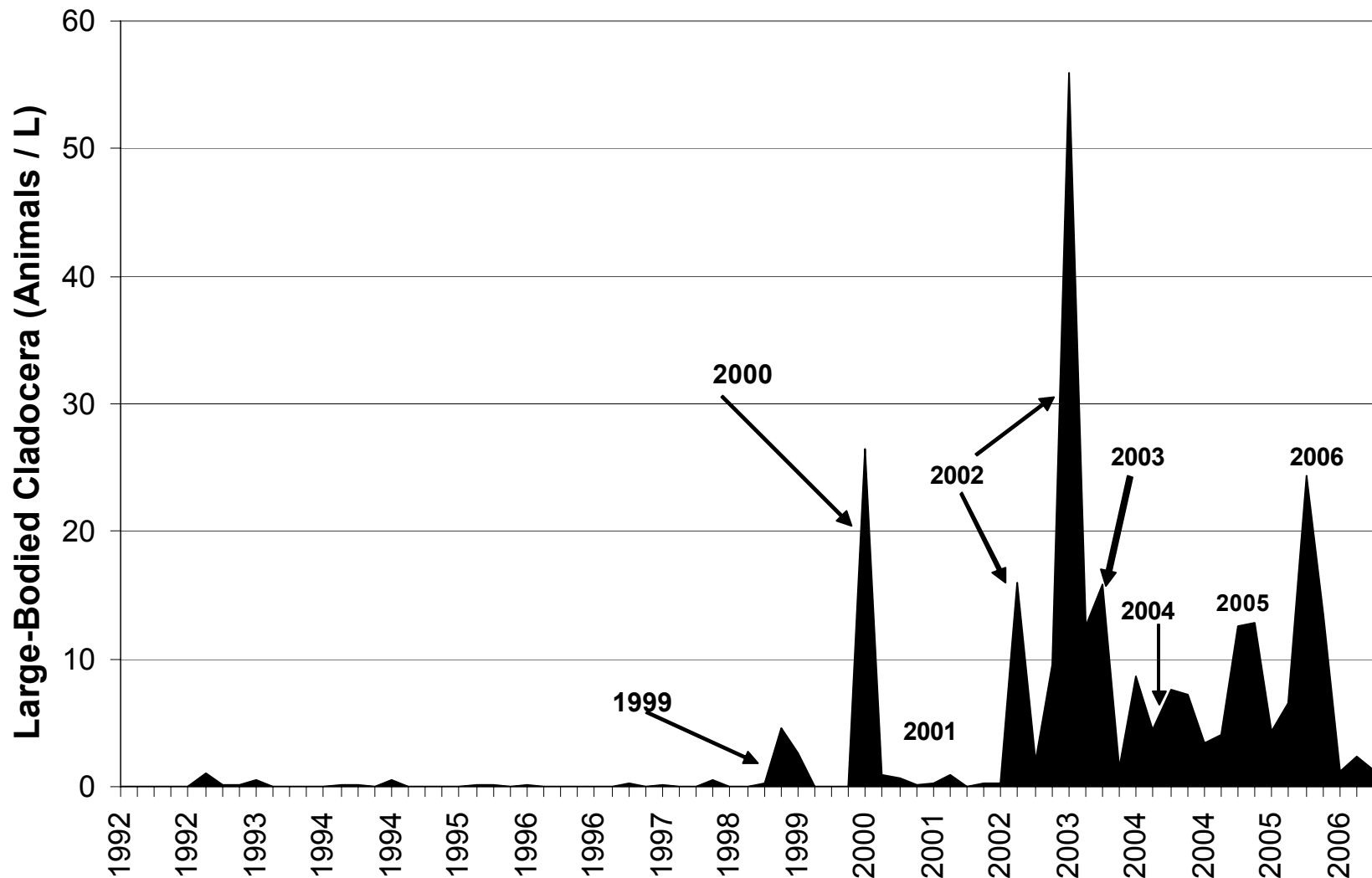


The number of Cyanobacteria genera has increased since 2002 (higher diversity).

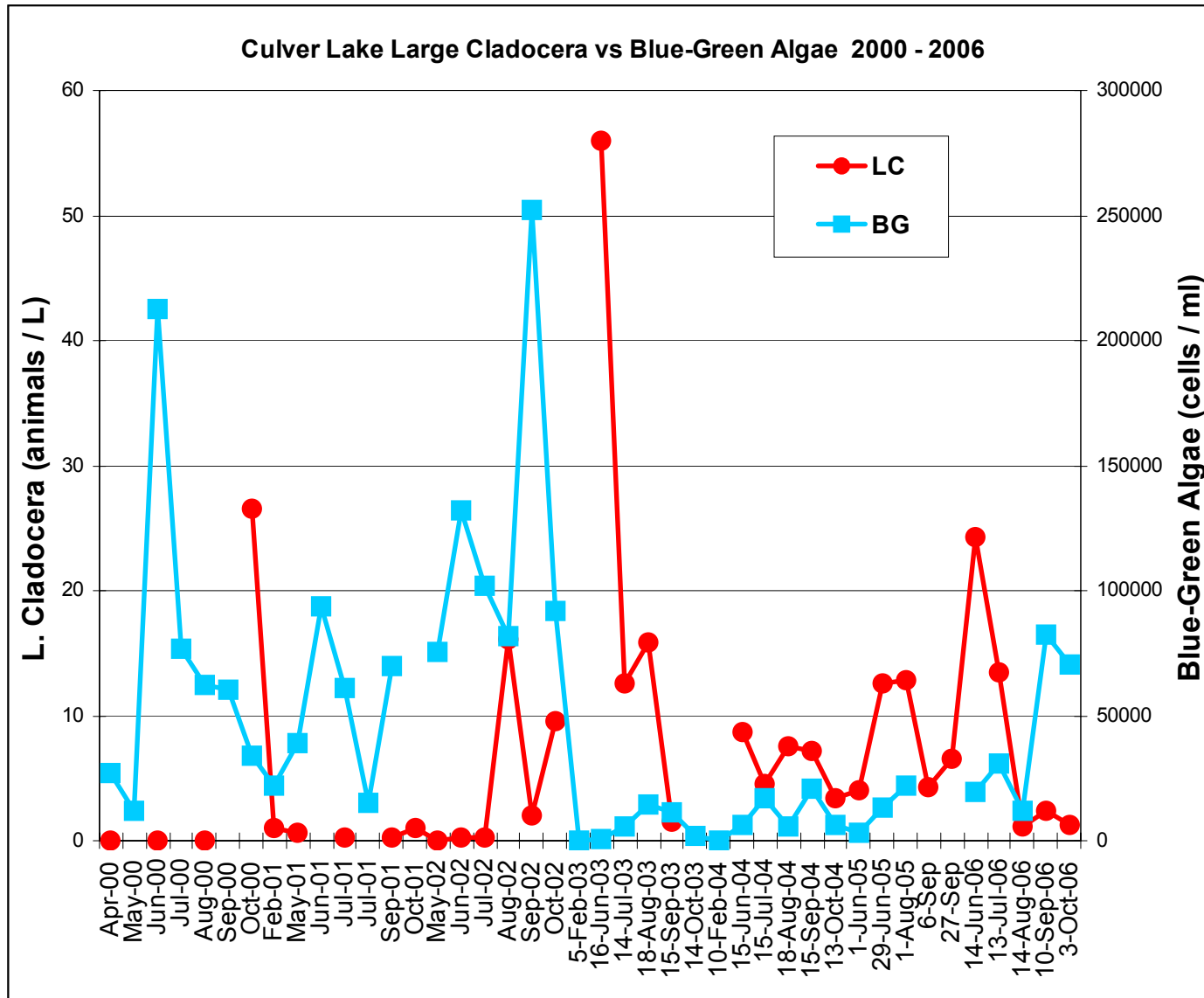


**Large-bodied Cladocera (*Daphnia* sp.) are very important to Culver Lake. Numbers were high during June and July, but declined later in the summer. (This may indicate a large young-of-year alewife population, or may be due to environmental/food resource factors).**

Culver Lake LARGE CLADOCERA (> 0.8 mm) 1992 - 2006

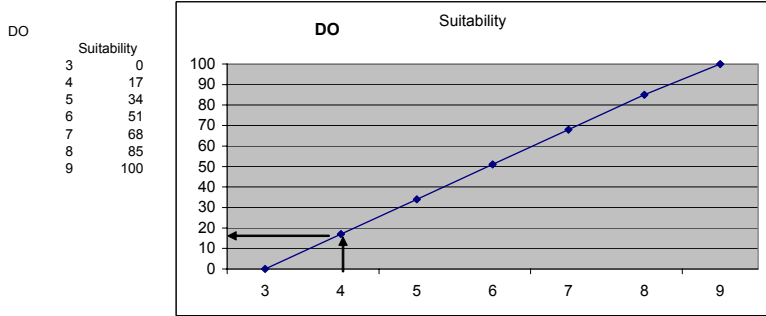
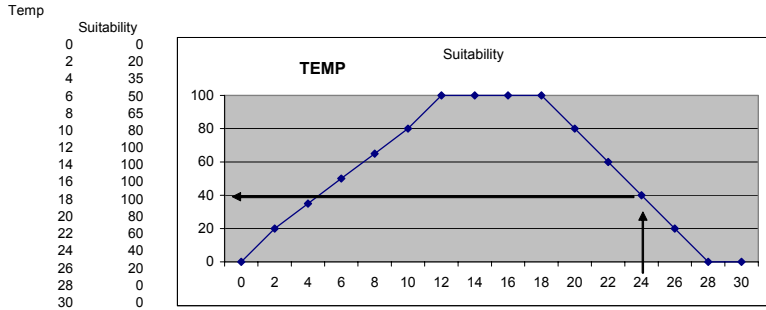


Large-bodied Cladocera have been more abundant at Culver Lake since 2000. The zooplankton assemblage should continue to be monitored.



Large-bodied Cladocera tend to be most abundant when the density of blue green algae is low.

**US Fish and Wildlife Suitable Habitat Index for Brown Trout**

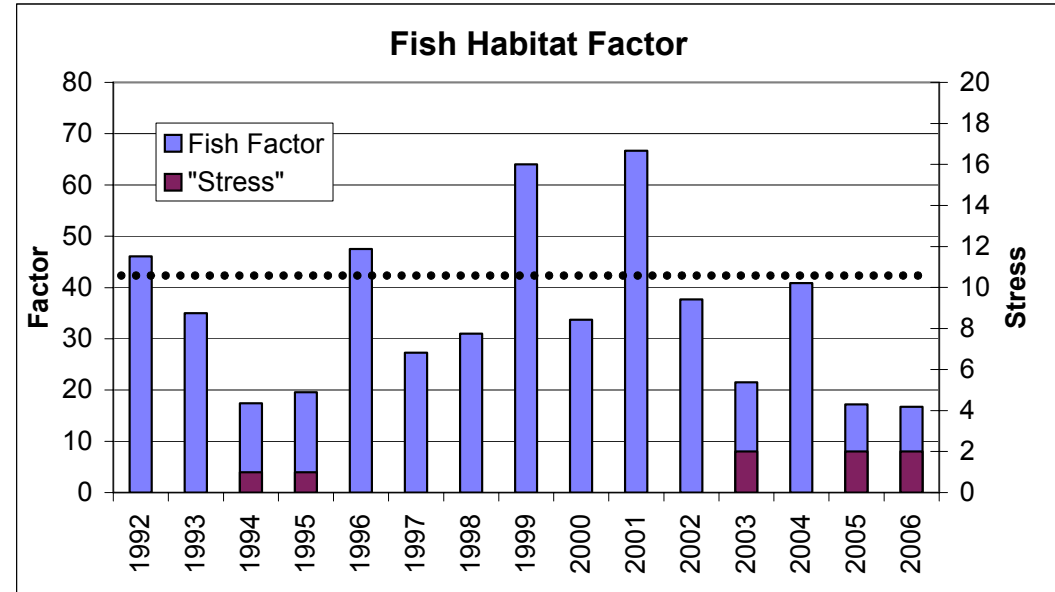


Year	Fish Factor	"Stress"
1992	46.1	0
1993	35	0
1994	17.4	1
1995	19.6	1
1996	47.5	0
1997	27.3	0
1998	31	0
1999	64	0
2000	33.7	0
2001	66.7	0
2002	37.7	0
2003	21.5	2
2004	40.85	0
2005	17.2	2
2006	16.7	2

**Culver Lake Fish Habitat Factor**

"Factor" is a combination of habitat suitability as a function of temperature and dissolved oxygen; reported as a % of optimum habitat for brown trout.

"Stress" indicates that the either Temp or DO conditions were poor during the summer.  
 > 50 % "Excellent"  
 25-50% "Good"  
 <25% "Poor"



**Habitat for cold water fish was “survivable –stressed conditions” in 2006. (using the Brown Trout habitat suitability model of the USFWS).**

# Culver Lake Water Chemistry Data 2006

## Total Phosphorus as P (ug/L)

Depth (m)	19-Apr	14-Jun	13-Jul	14-Aug	18-Sep	3-Oct
1		16	14	18	11	18
3	15	13	16	14	15	20
5	36	17	10	9	9	22
7		10	8	4	12	15
9		10	10	10	13	14
12		13	17	13	24	23
14		33	33	133	104	224

## Ammonia as N (ug/L)

Depth (m)	19-Apr	14-Jun	13-Jul	14-Aug	18-Sep	3-Oct
1		<10	16	18	17	24
3	13	17	16	13	13	20
5	110	22	33	16	20	21
7		41	<10	27	<10	12
9		96	<10	44	21	37
12		115	147	194	89	126
14		405	610	1000	630	1010

## Specific Cond (µmhos/cm)

Depth (m)	19-Apr	14-Jun	13-Jul	14-Aug	18-Sep	3-Oct
1		202	190	199	192	202
3	197	202	190	199	194	202
5	201	203	200	202	197	202
7		204	205	204	201	199
9		204	205	205	203	201
12		203	206	207	205	203
14		207	211	238	220	239

## Total Iron (mg/L)

Depth (m)	19-Apr	14-Jun	13-Jul	14-Aug	18-Sep	3-Oct
7		0.03	0.034		0.08	0.046
9		0.03	0.06	0.04	0.1	0.055
12		0.05	0.053	0.06	0.1	0.07
14		0.09	<0.01	0.66	0.41	0.95

## Turbidity NTU

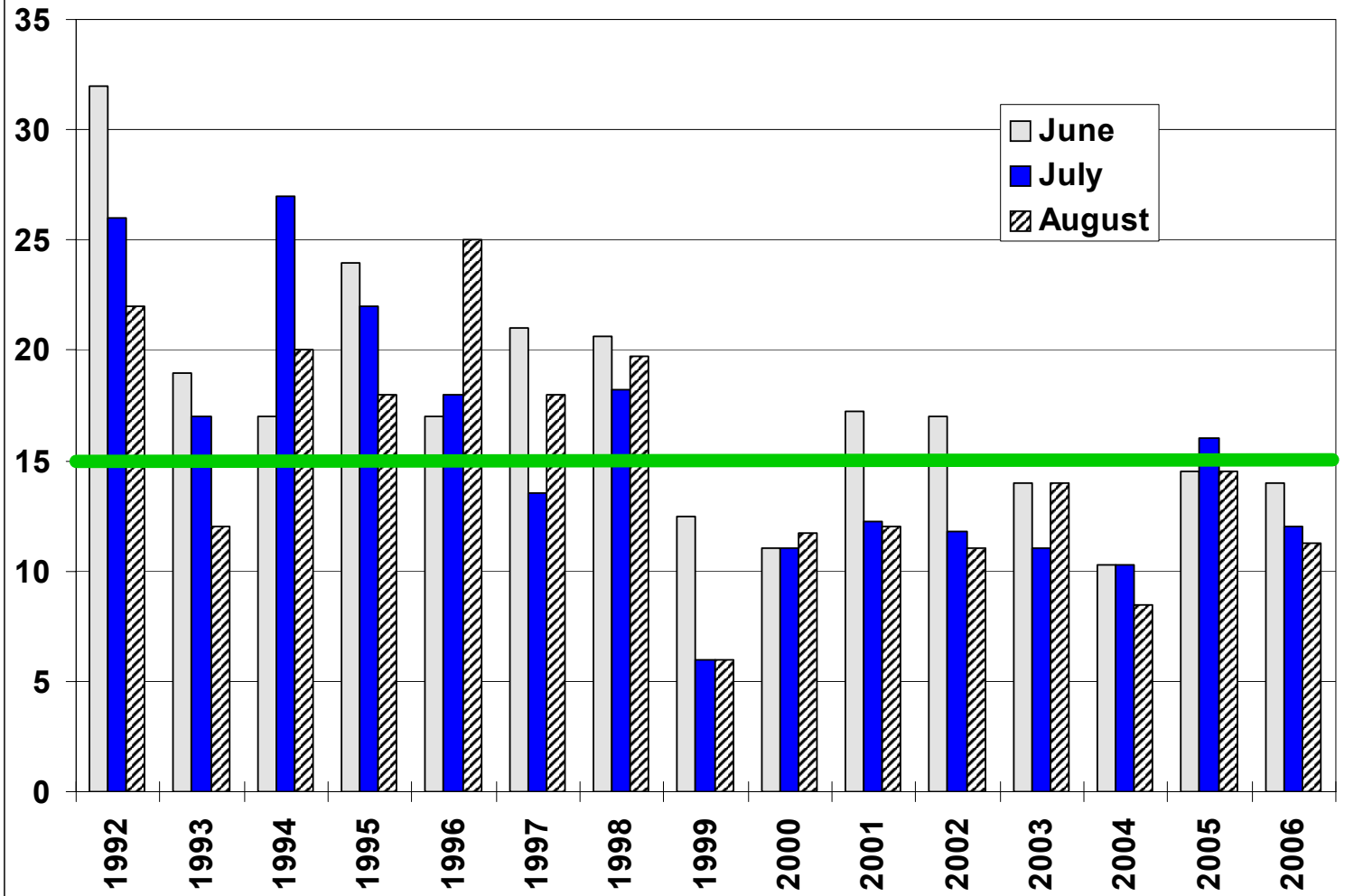
Depth (m)	19-Apr	14-Jun	13-Jul	14-Aug	18-Sep	3-Oct
1		1.6	3.2	2.1	6.2	6.4
3	1	1.9	3.3	1.8	7.5	5.9
5	1.1	1.6	1.2	1.5	4.3	6.9
7		1.3	0.8	2.5	1.9	6.4
9		1.3	1.3	3.4	2.9	4.4
12		0.9	3.9	2.4	5.3	4
14		1.9	4.1	2.9	4.3	3.2

## Total Manganese (mg/L)

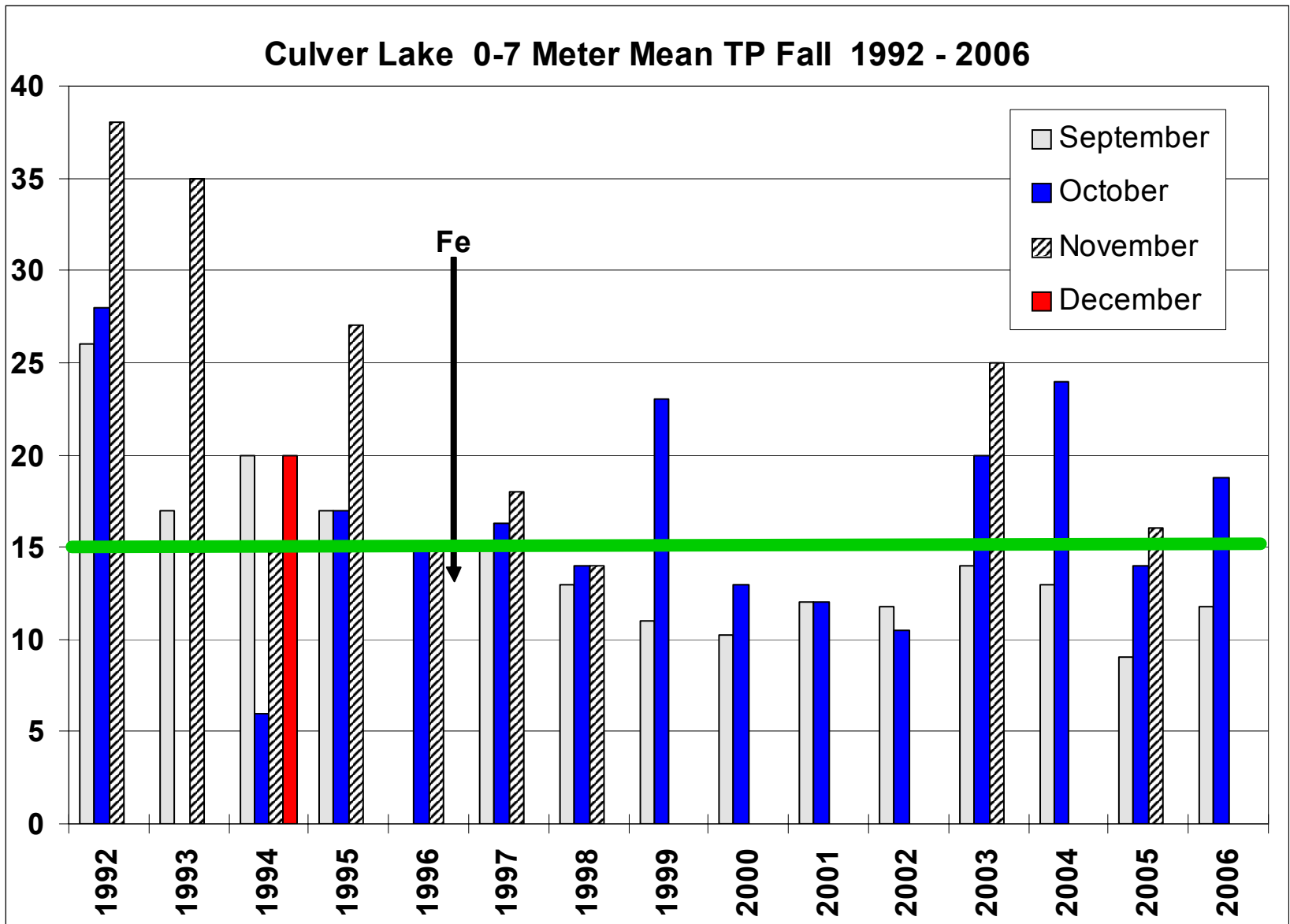
Depth (m)	19-Apr	14-Jun	13-Jul	14-Aug	18-Sep	3-Oct
7			0.056			
9			0.13			
12			0.51			
14		0.69	2.4	7.9	4	6.3

**Total phosphorus content remained relatively low during 2006, with accumulation in the deepest strata. Surface water turbidity remained low through August, but increased in September and October due to increased phytoplankton. Ammonia-N remained relatively low down to 12m (due to aeration). Deep strata iron content varied between 0.4-1.0 mg/L during August-October.**

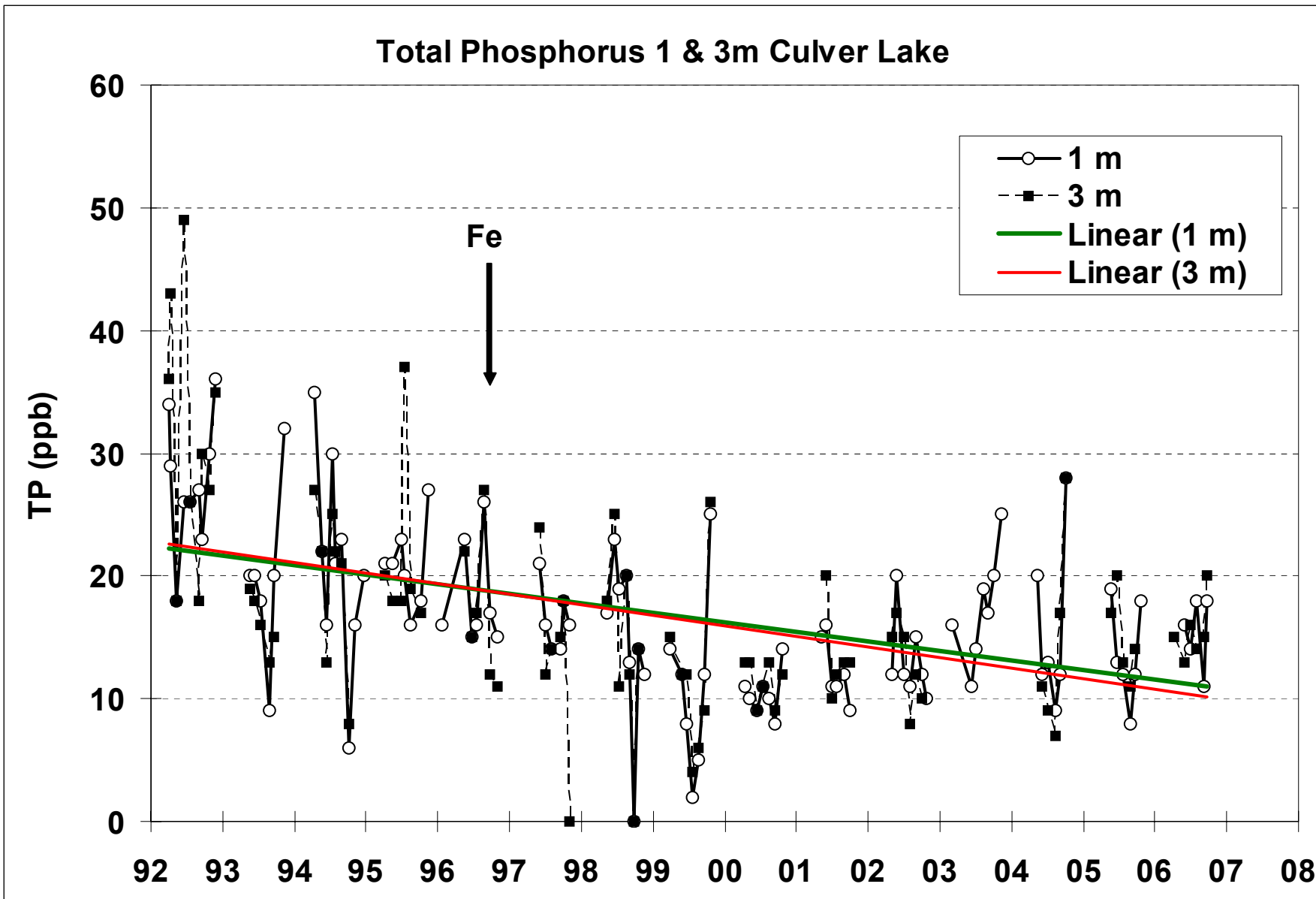
Culver Lake 0-7 Meter Mean TP Summer 1992 - 2006



The surface water TP content decreased during the 1990s, and appears to have stabilized at between 10-15 mg m<sup>-3</sup> (ppb).

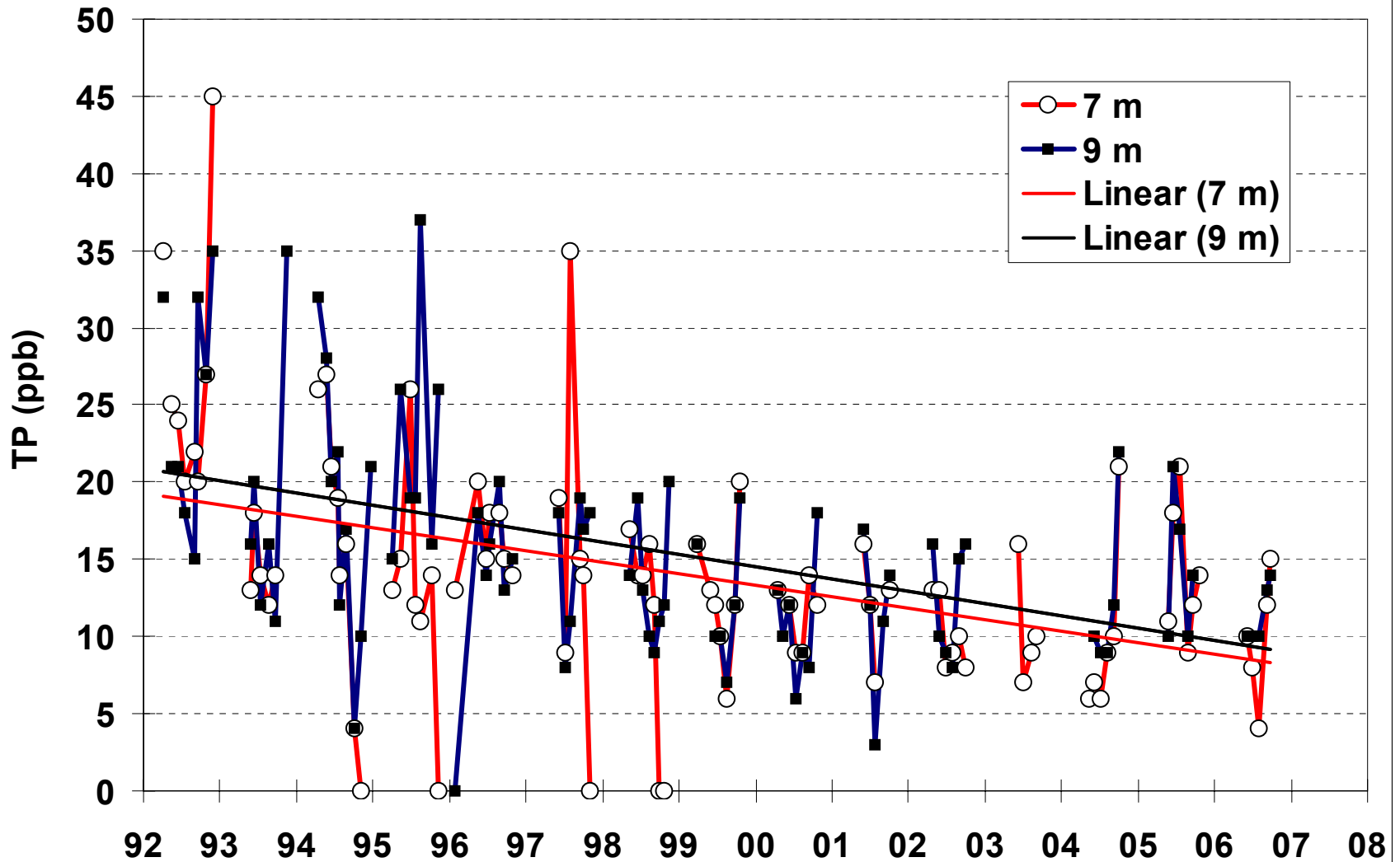


Although a modest late Fall bloom occurred causing an algae scum in several lake perimeter areas, the Fall TP content remained lower than during the early 1990s (probably due to the higher hypolimnetic iron concentration which helps remove TP in the Fall).



**TP availability in surface water decreased between 1992 and 2000, and has become more stable at approximately 15 ppb.**

# Total Phosphorus 7 & 9 m Culver Lake



**TP content in the mid-depth layer decreased between 1992 and 2000, and has become more stable at <15 ppb.**