

Forest Lake, Site 1

Adair County



2008 DATA

Date	Secchi (inches)	TP (µg/L)	TN (µg/L)	CHL (µg/L)	ISS (mg/L)
4/30	36	28	490	10.8	4.0
5/21	53	23	520	8.1	2.7
6/5	58	16	420	5.7	2.7
6/23	46	19	460	6.4	3.4
7/17	54	19	460	7.1	2.7
8/12	25	43	510	17.0	7.4
8/28	42				
9/16	10	76	520	9.7	28.1
Mean	36	28	482	8.7	4.8

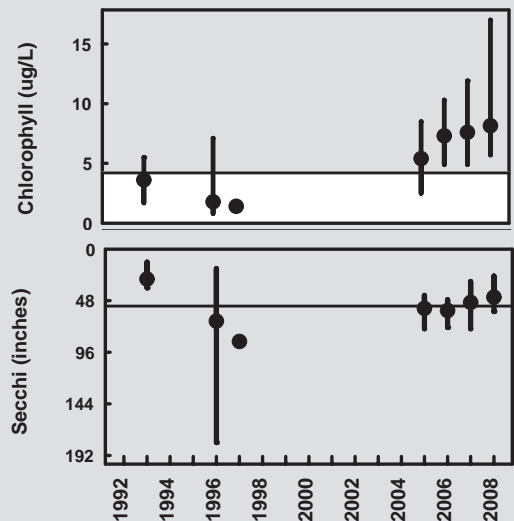
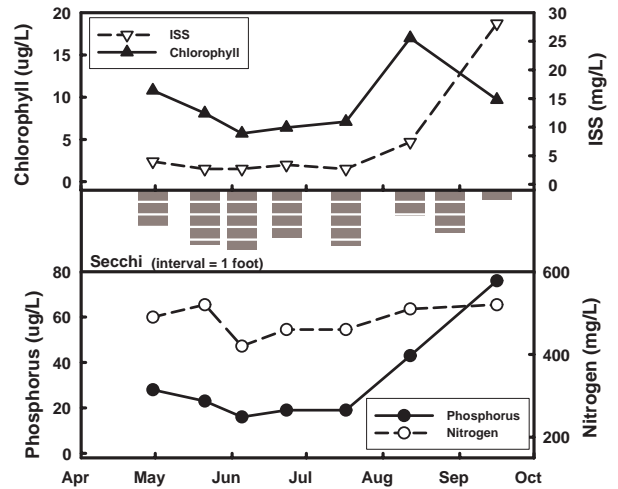
2008 SUMMARY

Two sites on Forest Lake were each visited on 8 occasions in 2008. More than 8 inches of rain fell on the area in the 4 days preceding the final sample of the season on 9/16.

Site 1 (the dam) exhibited little variation in water quality through July. Secchi transparencies ranged from 3 to 4 ½ feet during that period. Phosphorus concentrations varied by only 12 µg/L, Nitrogen varied by 100 µg/L, chlorophyll by 5.1 µg/L, suspended solids by 1.3 mg/L, all relatively small ranges given the mean concentrations. With the August and September samples came increased variability, especially for phosphorus and suspended solids. The phosphorus concentration in September was more than 4 times greater than the minimum. The September suspended solid value was more than 10 times the minimum, and 8 times the seasonal mean. Such increases are typical during and following periods of heavy rainfall.

TRENDS

The end of the season phosphorus and suspended solids measurements occur outside the dates we use to define the “summer” sampling season, so those high values are excluded from the year-to-year trend analyses. Even excluding the high, end-of-season values, 2008 phosphorus values were still slightly higher than observed in any year since 1993. Chlorophyll concentrations were the highest observed to date, and the Secchi transparency was the lowest since 1993, though the values are only marginally different from 2007.



Forest Lake, Site 2

Adair County

2008 DATA



Date	Secchi (inches)	TP (µg/L)	TN (µg/L)	CHL (µg/L)	ISS (mg/L)
4/30	20	43	550	10.3	10.3
5/21	20	36	500	11.6	7.8
6/5	50	24	420	9.7	3.5
6/23	22	43	550	19.9	9.4
7/17	48	32	570	15.6	3.2
8/12	16	54	520	17.1	14.0
8/28	34				
9/16	7	153	700	26.0	61.0
Mean	23	46	539	14.9	9.5

2008 SUMMARY

Site 2 is typical of most up-lake sites. The concentrations of nutrients, chlorophyll and sediments are higher, and water clarity is lower than found at the dam. This is typical of nearly all up-lake sites (Lake Springfield is one exception), as more particulates settle out and nutrients are cycled the longer water “resides” in the lake. Water at the dam will have been in the reservoir longer than water at an inflowing arm. Variability of water quality measurements was quite low at Site 2, save for the September 16 peak. This peak was also observed at the dam, however the phosphorus, chlorophyll and ISS values at Site 2 were more than twice as high as observed at the dam on that day.

TRENDS

Of the four years that Site 2 has been sampled, the last two have had higher concentrations of phosphorus and nitrogen than the previous two, while chlorophyll concentrations have remained comparable across all four years. Secchi transparency values were odd in 2008, with a total range matching that of all years combined.

