

Hazel Creek Lake, Site 1

Adair County

2008 DATA

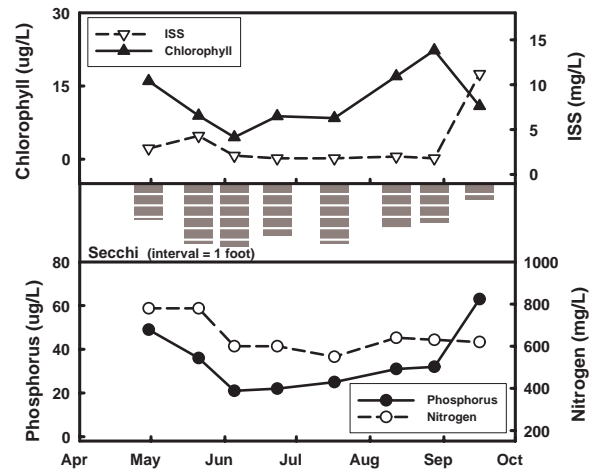


Date	Secchi (inches)	TP (µg/L)	TN (µg/L)	CHL (µg/L)	ISS (mg/L)
4/30	39	49	780	16.0	2.9
5/21	64	36	780	8.9	4.3
6/5	68	21	600	4.5	2.1
6/23	56	22	600	8.8	1.8
7/17	64	25	550	8.4	1.8
8/12	48	31	640	17.0	2.0
8/28	42	32	630	22.3	1.8
9/16	18	63	620	10.9	11.2
Mean	47	33	645	10.9	2.8

2008 SUMMARY

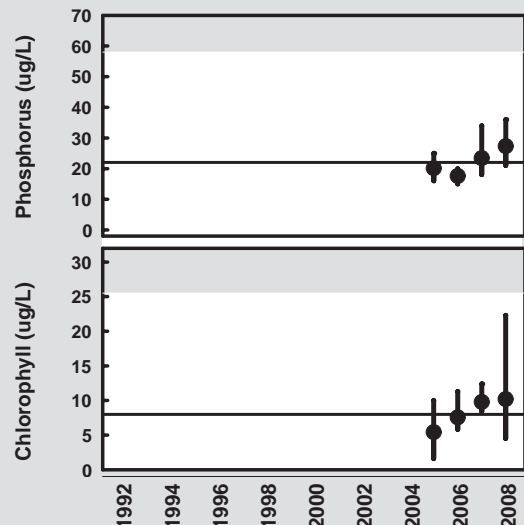
Three Hazel Creek sites were sampled 8 times each in 2008.

The dam site (Site 1) had the highest water clarity and lowest concentrations of nutrients, chlorophyll and sediments. This is (with very few exceptions) typical of reservoirs. At sites nearer the dam, the sediments have had more time to settle out and in-lake processes have had longer to cycle nutrients downward toward the bottom. Kirksville got more than 8 inches of rainfall in the four days prior to the last sample date. Not surprisingly, ISS values were quite high on that day. Chlorophyll concentrations decreased, relative to the previous sample date, due to the shading of algae by particles suspended in the water column.



TRENDS

Of the four seasons that this lake has been monitored, 2008 had the highest concentrations of nutrients. The 2008 mean chlorophyll concentration was the highest observed to date, though only marginally higher than 2007. However, the maximum chlorophyll concentration in 2008 was nearly double the previous chlorophyll maximum (2007). Summer Secchi transparency values and ISS concentrations were comparable to the long-term mean.



Hazel Creek Lake, Site 2

Adair County

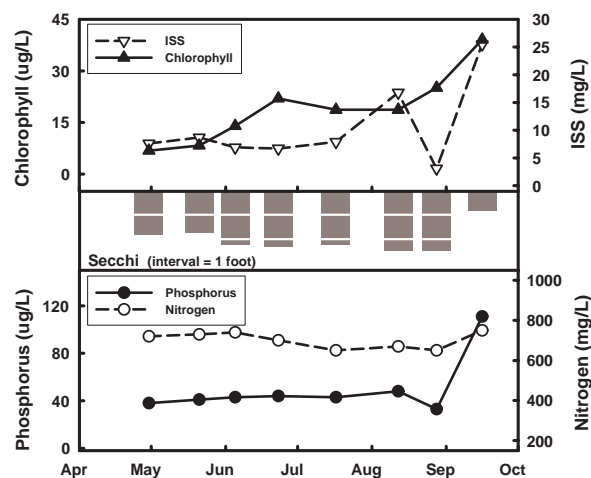
2008 DATA



Date	Secchi (inches)	TP (µg/L)	TN (µg/L)	CHL (µg/L)	ISS (mg/L)
4/30	22	38	720	6.8	7.6
5/21	21	41	730	8.3	8.7
6/5	27	43	740	14.0	6.9
6/23	28	44	700	22.0	6.7
7/17	27	43	650	18.7	7.9
8/12	30	48	670	18.7	16.8
8/28	30	33	650	25.1	3.1
9/16	10	111	750	39.1	25.5
Mean	23	47	700	16.7	8.7

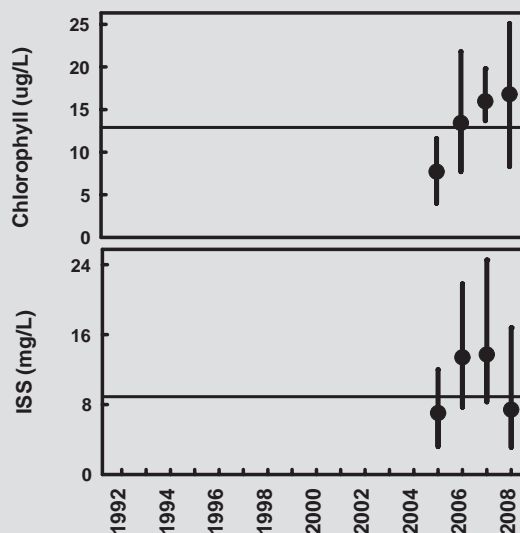
2008 SUMMARY

From the beginning of the season through the end of July, conditions at this site were extremely stable. However, beginning with the 8/12 sample date, conditions began to vary widely. The increase in ISS noted on 8/12 was likely caused the 9 inches of rain that occurred over a two-day period at the end of July. ISS concentrations drop considerably by the next sample on 8/28, following what was one of the longest dry periods of the 2008 sampling season. However, in the 4 days prior to the 9/16 sample, more than 6 inches of rain fell, driving ISS and phosphorus concentrations up again and reducing the water clarity to a third of its previous value.



TRENDS

The mean summer concentrations of phosphorus, nitrogen and chlorophyll were higher in 2008 than in any year monitored to date, though only slightly. ISS concentrations, interestingly, were lower than observed in 2007. The 2008 summer mean Secchi transparency value was comparable to the long-term mean. “Summer” values only include those samples collected between May 15 and September 15, so the high end-of-season values (9/16) are not included when calculating the means.



Hazel Creek Lake, Site 3

Adair County

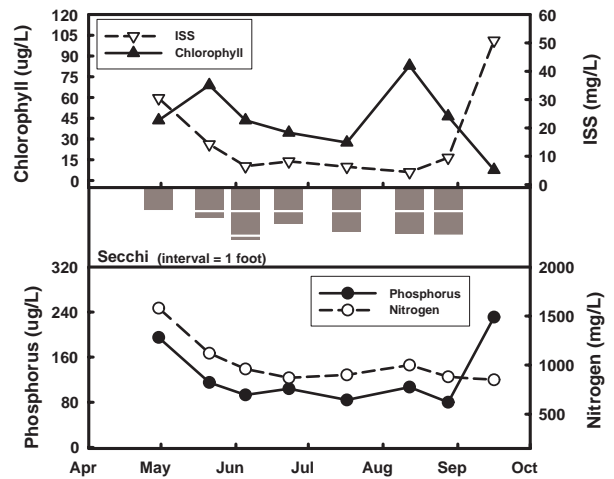
2008 DATA



Date	Secchi (inches)	TP (µg/L)	TN (µg/L)	CHL (µg/L)	ISS (mg/L)
4/30	12	195	1580	43.5	30.5
5/21	15	115	1120	69.0	14.2
6/5	26	93	960	43.6	6.5
6/23	18	104	870	34.6	8.2
7/17	22	84	900	27.5	6.3
8/12	23	107	1000	83.0	4.4
8/28	24	80	880	46.4	9.5
9/16		231	850	7.7	50.8
Mean	19	117	999	37.2	11.5

2008 SUMMARY

This shallow, up-lake site is divided from the main lake by a culvert pipe, creating a largely isolated pool that acts as a settling basin for the main lake. Secchi transparency values were low at this site, ranging from 1 foot to just over 2 feet or about half that of the dam. Phosphorus concentrations were high throughout the season, and peaked on the last sampling day at 231 µg/L. Overall, phosphorus concentrations were about 3 times higher at Site 3 than at the dam, while chlorophyll and ISS concentrations were nearly 4 times higher.



TRENDS

While chlorophyll concentrations were higher in 2008 than in previous years at this site, all other parameters exhibited values typical for this site. 2008 summer ISS concentrations were somewhat lower than observed in 2007, though the “summer” values do not include the extreme values observed on April 30 and on September 16.

