

Hazel Creek Lake



Site 1

2010 DATA

Adair County
 Latitude: 40.2985 Longitude: -92.628

Date	X	5/25	X	X	7/13	X	9/21	9/28	Mean
Secchi (inches)		19			41		42	20	28
TP (µg/L)		.			28		26	29	28
TN (µg/L)		.			590		640	790	668
CHL (µg/L)		15.1			9.7		9.4	6.8	9.8
ISS (mg/L)		6.7			2.2		3.5	3.3	3.6

The limited data collected in 2010 hinders seasonal analysis. The data that were collected suggest fairly stable water quality during the 2010 season, with slightly higher inorganic suspended sediment and chlorophyll data in the May sample.

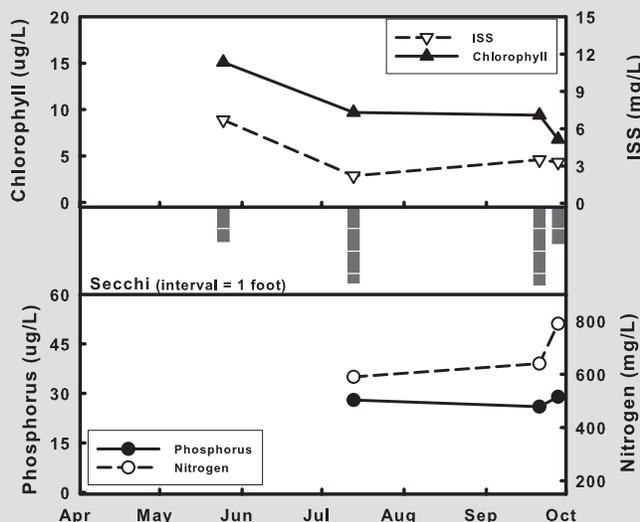
The number of samples collected each summer from Hazel Creek Lake has ranged from two in 2010 to six in 2005 and 2008. Differences in sample numbers and the distribution of data from across the summer can influence results, making comparisons of long-term data a challenge.

The average Secchi transparency in 2010 was the lower than previous years, which

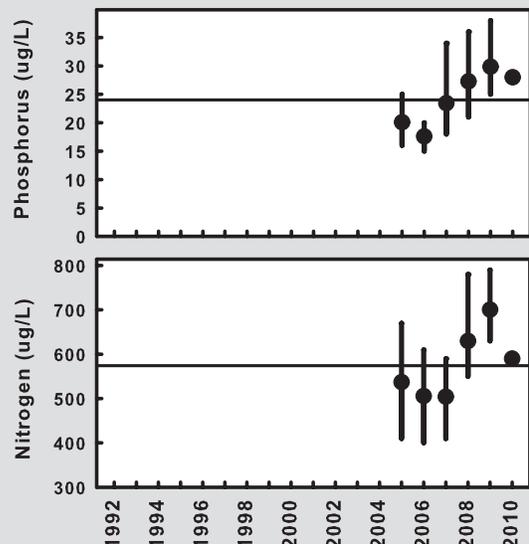
suggests increased levels of either algal chlorophyll or inorganic suspended sediment. Review of the data indicate that chlorophyll was lower and suspended sediment slightly higher than normal in 2010. This fairly small increase in suspended sediment values would account for the decreased water clarity.



2010 GRAPHS



TREND GRAPHS



See pages 10-11 for help interpreting graphs

Hazel Creek Lake



Site 2

2010 DATA

AdairCounty
Latitude: 40.2805 Longitude: -92.6045

Date	X	5/25	7/13	X	7/13	X	9/21	9/28	Mean
Secchi (inches)		19	20		20		20	30	22
TP (µg/L)		36	67		67		73	52	55
TN (µg/L)		720	750		750		870	770	776
CHL (µg/L)		10.6	31.5		31.5		34.7	26.8	23.6
ISS (mg/L)		6.6	10.6		10.6		15.8	9.5	10.1

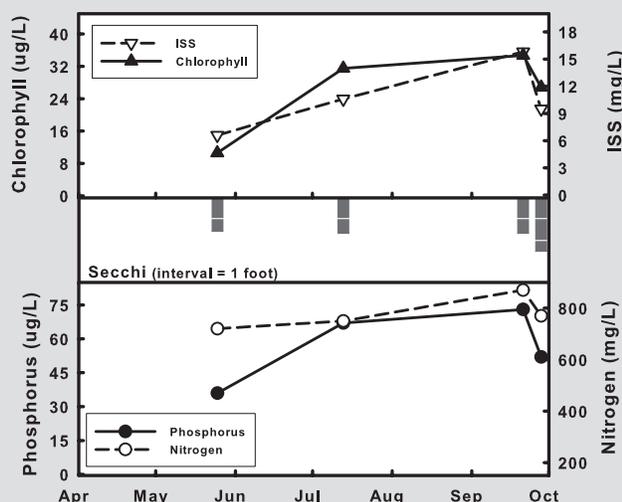
The nutrients, algal chlorophyll and inorganic suspended sediment concentrations all followed the same pattern during the 2010 sampling season. Values increased (at different rates) from the first sample in May till the third sample on September 21. The fourth sample was conducted a week after the third, with the parameters showing a decline in concentration. Secchi transparency remained stable at 20 inches and increases by ten inches on the last sample date.

its our ability to identify this as a trend. Continued monitoring (with full seasonal collections) will be needed to determine if there is a trend for changing water quality.

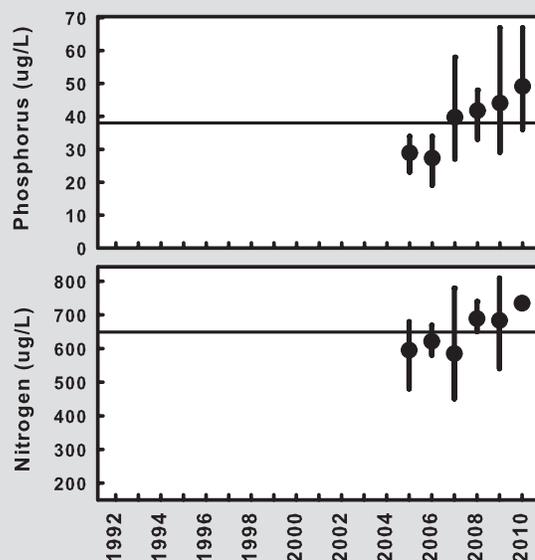


Both average phosphorus and nitrogen concentrations have increased since 2005. While this suggests declining water quality at Site 2, minimal data collection during some of the summers lim-

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Hazel Creek Lake



Site 3

2010 DATA

Adair County
 Latitude: 40.2772 Longitude: -92.6092

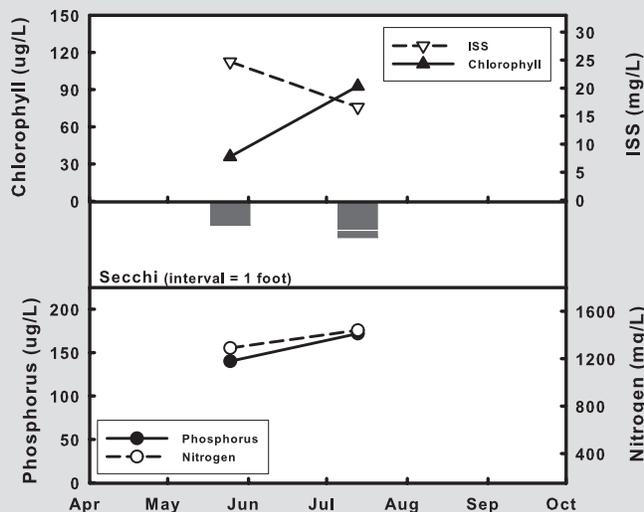
Date	X	5/25	X	X	7/13	X	X	X	Mean
Secchi (inches)		10			15				12
TP (µg/L)		140			172				155
TN (µg/L)		1290			1440				1363
CHL (µg/L)		35.9			92.7				57.7
ISS (mg/L)		24.7			16.6				20.2

Due to limited sampling, seasonal trends cannot be addressed for the 2010 season. Site 3 on Hazel Creek Lake has very different water quality than the other two sites. It is to be expected that the dam site (#1) would be different from the other sites as it is not directly influenced from inflows. What is somewhat surprising is the difference in water quality between sites 2 and 3. These sites are both located on the far southeastern end of the lake, in inflowing coves. The difference in water quality between these sites is related to differences in the watersheds that drain into these two sites. There is about three times as much watershed flowing into Site 3 than Site 2 (≈1550 versus 540 acres).

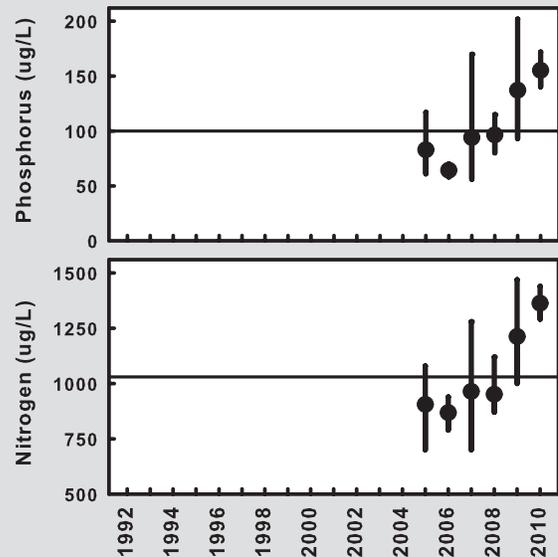
As observed at Site 2, both phosphorus and nitrogen concentrations have increased over the last two summers. Again, we have limited data from this site during some of the summers which inhibits our ability to analyze and determine if there is a trend for changing water quality at this site.



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