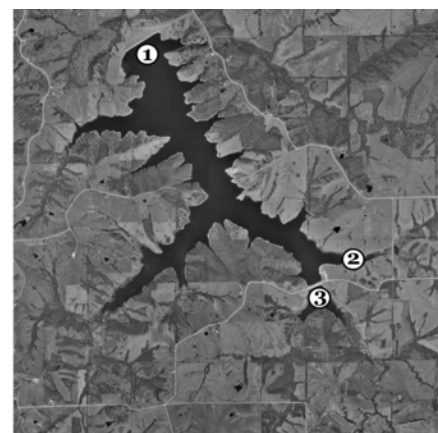
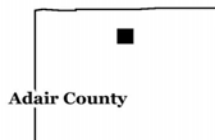


# Hazel Creek Lake

Hazel Creek is located in Adair County and provides drinking water for the city of Kirksville. This lake has a surface area of 457 acres, and a watershed of 5,166 acres. Hazel Creek's watershed is comprised of 57% grassland and 28% forest cover.



Location of Hazel Creek Lake and its sample sites

Care should be taken when comparing data from the three sites on Hazel Creek. Longitudinal gradients occur in reservoirs, with sites near inflows naturally having higher nutrient and ISS values than the dam site. This gradient may be complicated by Site 3's location in a small catch basin that is separated from the lake. This disconnected nature and difference in depth may limit how comparable Site 3 is not only from Site 1, but also Site 2.

## Descriptive statistics for Hazel Creek Lake – 2005

	Secchi (inches)	TP (ug/L)	TN (ug/L)	CHL (ug/L)	ISS (mg/L)
<b>Geometric Mean</b>	<b>52</b>	<b>24</b>	<b>577</b>	<b>6.7</b>	<b>2.6</b>
<b>Minimum</b>	28	16	410	1.6	0.8
<b>Maximum</b>	112	42	760	17.3	6.4
<b>Number of Samples</b>	8	8	8	8	8

## Descriptive statistics for Hazel Creek Lake, Site 2 – 2005

	Secchi (inches)	TP (ug/L)	TN (ug/L)	CHL (ug/L)	ISS (mg/L)
<b>Geometric Mean</b>	<b>30</b>	<b>32</b>	<b>619</b>	<b>8.2</b>	<b>6.7</b>
<b>Minimum</b>	23	23	480	4.0	3.2
<b>Maximum</b>	48	53	760	11.6	12.0
<b>Number of Samples</b>	8	8	8	8	8

## Descriptive statistics for Hazel Creek Lake, Site 3 – 2005

	Secchi (inches)	TP (ug/L)	TN (ug/L)	CHL (ug/L)	ISS (mg/L)
<b>Geometric Mean</b>	<b>18</b>	<b>112</b>	<b>999</b>	<b>27.5</b>	<b>11.2</b>
<b>Minimum</b>	9	61	700	20.3	7.9
<b>Maximum</b>	25	426	1460	45.9	23.6
<b>Number of Samples</b>	7	7	7	7	7

# Hazel Creek Lake

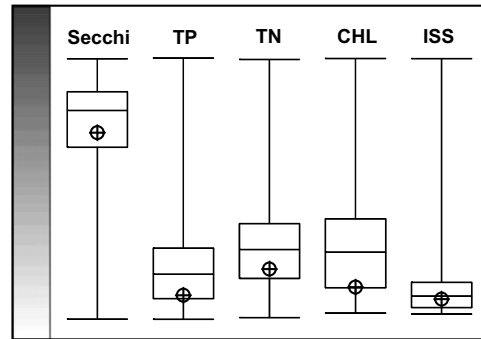
## Site 1 — 2005

Geometric means for all parameters are below the statewide median value at Hazel Creek Lake, Site 1.

Parameters at Site 1 showed moderate to high amounts of variation during the sample season. Chlorophyll concentrations varied tenfold during 2005.

The minimum chlorophyll and ISS values were measured on the same day. Low levels of both resulted in a Secchi reading that was more than twice the average of remaining readings.

**Relative Rank for Hazel Creek, Site 1**



## Site 2 — 2005

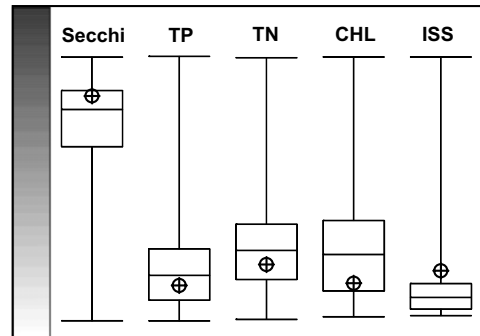
Nutrient, chlorophyll and ISS levels at Site 2 were higher than those measured at Site 1, though the differences were small given the dissimilarity of the sites (depth, proximity to inputs).

The geometric mean values for nutrients and chlorophyll were below statewide median values.

All parameters displayed low to normal amounts of variation during the sample season.

Chlorophyll generally followed the same seasonal trend that phosphorus did.

**Relative Rank for Hazel Creek, Site 2**



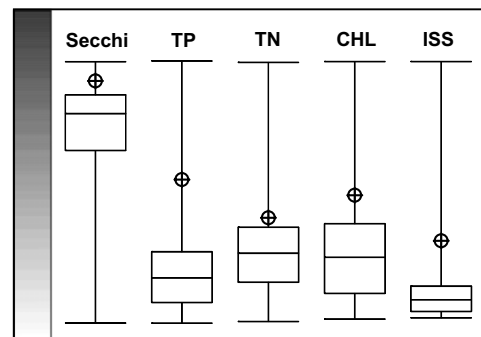
## Site 3 — 2005

Geometric means values for all parameters (except Secchi) were higher at Site 3 than at the other sites (more likely a reflection of the physical aspects of this site than a differences in inputs)

Parameter geometric means were all in the 75<sup>th</sup> percentile of statewide lakes, indicating poor water quality.

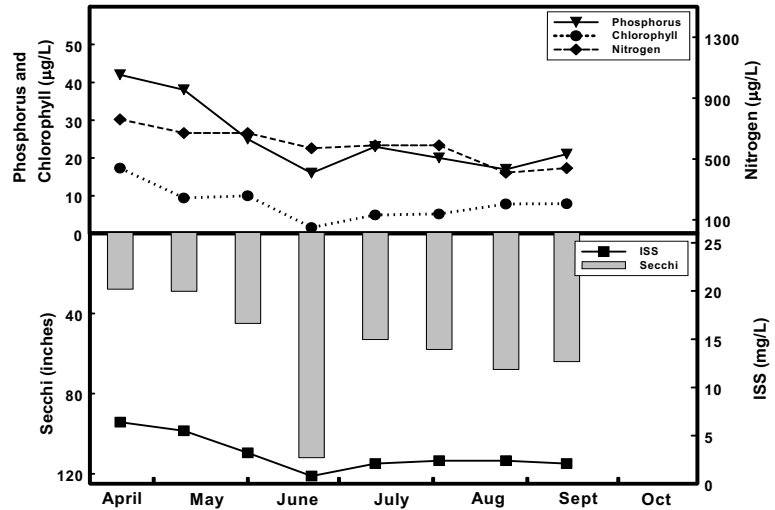
Phosphorus and ISS both displayed extreme values on the first sample date, with substantial decreases before the second sample.

**Relative Rank for Hazel Creek, Site 3**

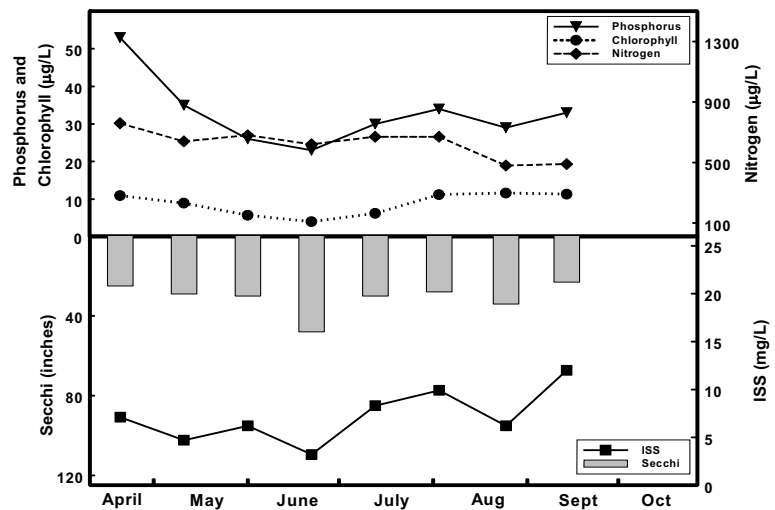


# Hazel Creek Lake

Seasonal fluctuations of parameters for Hazel Creek Lake, Site 1 - 2005



Seasonal fluctuations of parameters for Hazel Creek Lake, Site 2 - 2005



Seasonal fluctuations of parameters for Hazel Creek Lake, Site 3 - 2005

