

Ashland Lake

Ashland Lake is located in the University of Missouri’s Baskett Wildlife Research Area, east of Ashland. It is approximately 12 acres in size and has a watershed of 2,475 acres. This represents a large ratio of watershed size to lake volume, which reduces the lakes ability to dilute inflows and settle out particulate matter. The lake’s fishery is managed by the Missouri Department of Conservation and public fishing is allowed.



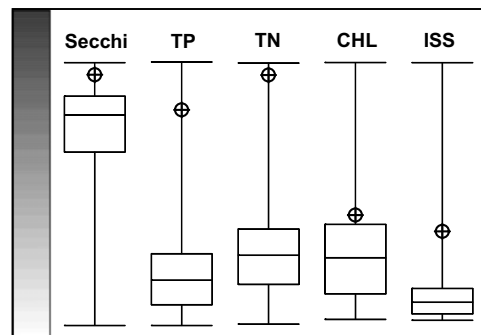
Location of Ashland Lake

Descriptive statistics for Ashland Lake – 2005

	Secchi (inches)	TP (ug/L)	TN (ug/L)	CHL (ug/L)	ISS (mg/L)
Geometric Mean	13	164	2105	23.4	12.8
Minimum	7	45	1210	12.2	5.2
Maximum	27	459	4230	45.8	79.0
Number of Samples	6	6	6	5	6

- Ashland Lake had high mean levels of nutrients, chlorophyll and ISS in 2005, with low mean Secchi transparency. All parameters were in the upper 25th percentile of the state rankings, indicating that Ashland Lake higher concentrations of nutrients and sediments, and lower water clarity than most Missouri lakes.
- Mean chlorophyll for 2005 was not as high as might be expected given the nutrient levels. This is probably due to the high levels of ISS, which impede sunlight penetration into the lake and thus limit photosynthesis. The two lowest chlorophyll values were measured on days when ISS was the highest.
- Nutrient and ISS values varied greatly during the sample season in 2005, with phosphorus varying by 10 fold, nitrogen by about ~4 fold and ISS by ~16 fold.

Relative Rank for Ashland Lake



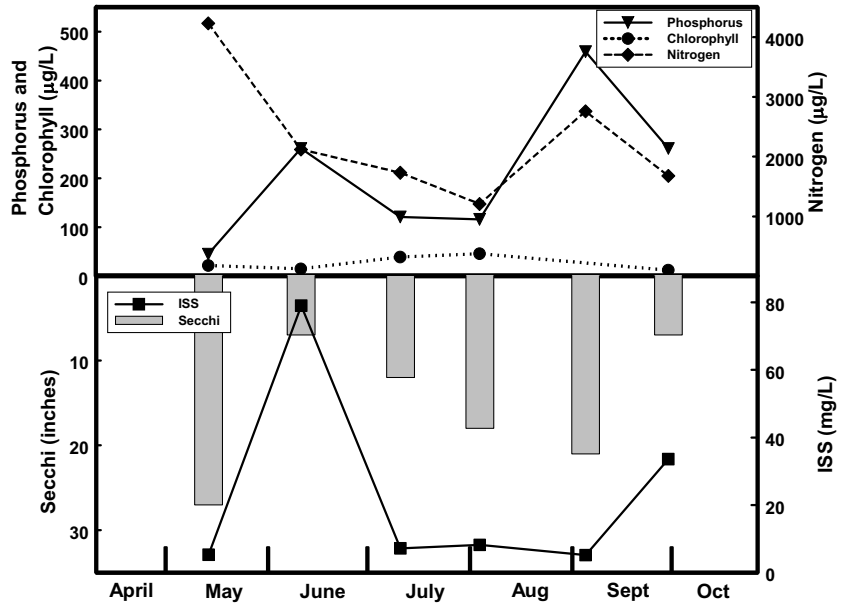
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Seasonal fluctuations of parameters for Ashland Lake – 2005

While parameters fluctuated during the sample season, there was not an overall prevailing pattern.

Secchi transparency varied with ISS values, indicating that the suspended sediments played a substantial role in determining water clarity in Ashland Lake.

The minimum phosphorus value was measured the same day as the maximum nitrogen value; usually these two parameters show more synchronicity.



Chlorophyll does not appear to vary much during the sample season, but this is a function of the extreme scale of the graphic.

Secchi and ISS Trends in Ashland Lake

Two high ISS values in the summer of 2005 (including an extreme value of 79mg/L) strongly influenced the shape of the 2005 box plot in the trend graph to the right. The remaining four values for 2005 were similar to previously observed values.

The two elevated ISS values are likely responsible for the reduction in Secchi transparency observed in 2005.

