

# Forest Lake



# Site 1

## 2010 DATA

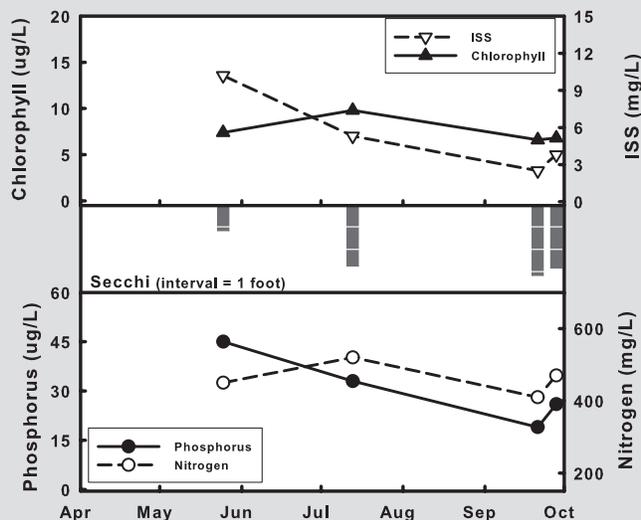
Adair County  
 Latitude: 40.1706 Longitude: -92.6556

Date	X	5/25	X	X	7/13	X	9/21	9/28	Mean
Secchi (inches)		14			33		38	34	28
TP (µg/L)		45			33		19	26	29
TN (µg/L)		450			520		410	470	461
CHL (µg/L)		7.4			9.8		6.6	6.8	7.6
ISS (mg/L)		10.2			5.3		2.5	3.8	4.8

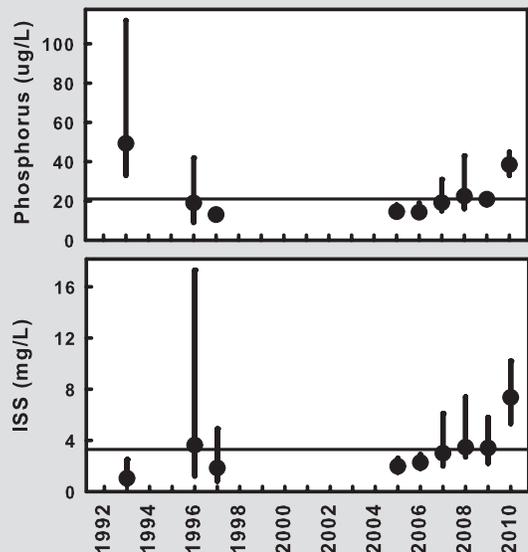
The limited data collected in 2010 hinders seasonal analysis. The sample collected in May had substantially higher levels of inorganic suspended sediment and phosphorus than samples collected later in the season. This is a common occurrence as turbid inflows into the lake early in the year carry suspended sediment (which often has phosphorus bound to it) and influence surface water quality. Inflows that occur later in the year tend to plunge into deeper lake layers, having minimal influence on surface water quality. The fluctuations in nitrogen and chlorophyll values during 2010 were relatively small.

Comparison of the inorganic suspended sediment and phosphorus long-term graphs (especially the last 6 years) shows how strongly these two parameters relate to each other in Forest Lake. Sediment coming into the lake as early season runoff also brings the nutrient phosphorus into the lake. It would seem that efforts to reduce inorganic suspended sediment inputs into the lake (via watershed management) would also reduce the amount of phosphorus entering the lake.

## 2010 GRAPHS



## TREND GRAPHS



See pages 10-11 for help interpreting graphs

# Forest Lake



# Site 2

## 2010 DATA

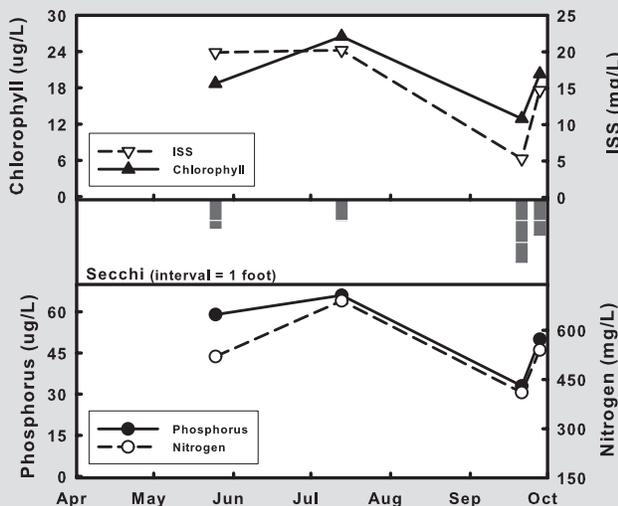
Adair County  
 Latitude: 40.1697 Longitude: -92.637

Date	X	5/25	X	X	7/13	X	9/21	9/28	Mean
Secchi (inches)		16			12		35	20	19
TP (µg/L)		59			66		33	50	50
TN (µg/L)		520			690		410	540	531
CHL (µg/L)		18.7			26.5		12.9	20.3	19.0
ISS (mg/L)		19.9			20.2		5.3	14.7	13.3

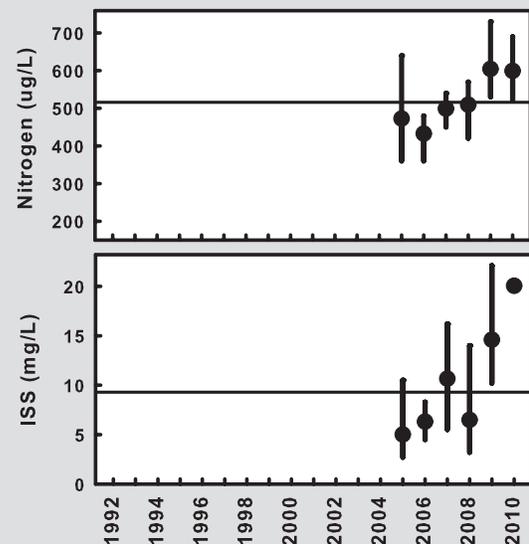
Site 2 is located in a tributary arm of Forest Lake and because it is closer to watershed inputs than Site 1, it tends to have higher nutrient, algal chlorophyll and inorganic suspended sediment values. Similar to Site 1, all of the parameters tracked each other during the 2010 sample season. The most interesting part of the 2010 data are the last two samples collected in September. These samples were collected only a week apart, but display considerably different water quality. The surface water temperature had decreased by 7° F between these two samples. It is very likely that the lake was mixing a little deeper on the last sample date, and higher nutrients, suspended sediment and chlorophyll reflect this deeper mixing of the lake.

Average summertime nitrogen values from the last two years have been higher than those measured in the previous four years. The same pattern was seen for phosphorus, inorganic suspended sediment, chlorophyll and Secchi transparency (lower Secchi readings). It would be erroneous to suggest that these data represent a trend in water quality as data collection in 2009 and 2010 have been limited (3 and 2 summer samples, respectively). Differences in sample numbers among the summers may affect the comparability of the data.

## 2010 GRAPHS



## TREND GRAPHS



See pages 10-11 for help interpreting graphs