

# Forest Lake



# Site 1



## 2011 DATA

Adair County

Latitude: 40.1706

Longitude: -92.6556

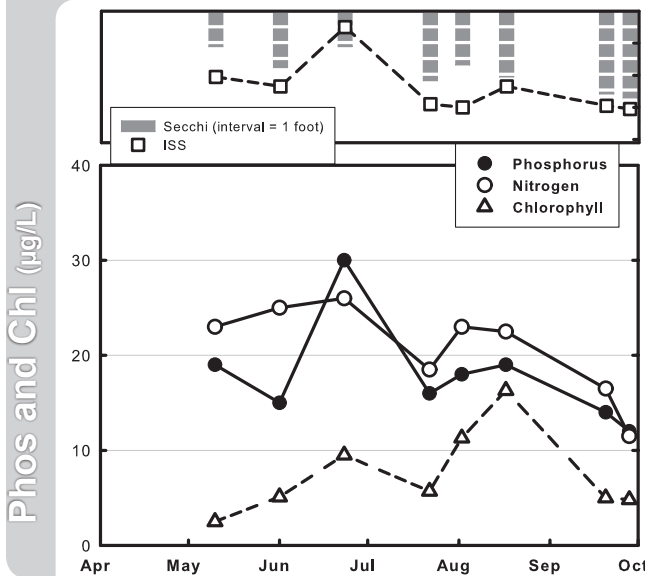
Date	5/10	6/1	6/23	7/22	8/2	8/17	9/20	9/28	Mean
Secchi (inches)	27	43	27	53	41	50	63	66	44
TP (µg/L)	19	15	30	16	18	19	14	12	17
TN (µg/L)	460	500	520	370	460	450	330	230	403
CHL (µg/L)	2.5	5.1	9.5	5.7	11.3	16.3	5.0	4.8	6.5
ISS (mg/L)	3.9	3.3	7.0	2.2	2.0	3.3	2.1	1.9	2.9

Water clarity at Forest Lake ranged from approximately 2 to 4 feet until September, when Secchi transparency exceeded 5 feet for the last 2 sample dates. A spike in the suspended sediment concentration (ISS) on June 23 coincided with a phosphorus peak and explains the comparatively low water clarity on that day (27 inches). Nutrient concentrations in 2011 were otherwise low for a northern Missouri lake. Chlorophyll concentrations were lowest in May and peaked in August, a typical seasonal pattern.

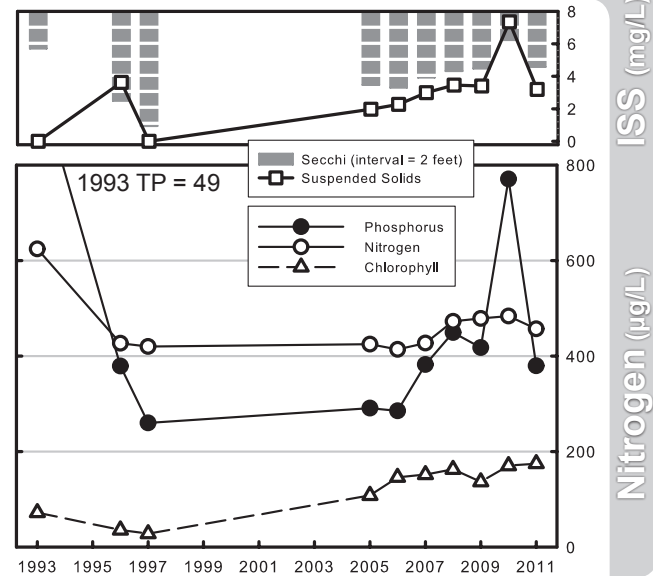
Concentrations of suspended sediment, phosphorus and chlorophyll have been trending upward since at least 2005. Water clarity has been trending downward across the same time frame.



## 2011 GRAPHS



## TREND GRAPHS



See page 3 for help interpreting graphs

# Forest Lake



# Site 2



## 2011 DATA

Adair County

Latitude: 40.1697

Longitude: -92.637

Date	5/10	6/1	6/23	7/22	8/2	8/17	9/20	9/28	Mean
Secchi (inches)	22	22	25	41	44	30	50	42	33
TP (µg/L)	19	23	52	37	35	36	24	20	29
TN (µg/L)	490	450	550	500	490	460	390	280	443
CHL (µg/L)	2.1	7.4	13.9	16.8	22.2	20.0	13.5	6.1	10.4
ISS (mg/L)	5.4	8.3	25.2	7.1	4.7	8.6	7.2	6.6	7.9

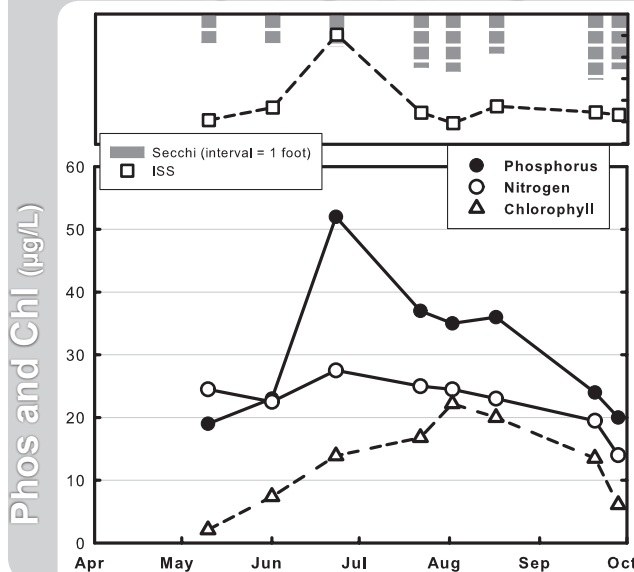
Site 2 is located in the Gill Branch arm of Forest Lake.

Compared to the dam site, water moves more quickly past Site 2 (shorter residence time). As a result, water clarity is typically lower here than at the dam. During the 2011 season, Site 2 had, on average, almost a foot less clarity than Site 1. Suspended sediment concentrations were considerably higher here than the dam, with one value exceeding 25 mg/L (6/23). Phosphorus concentrations were also higher at Site 2, though nitrogen concentrations were similar at both sites. Algal chlorophyll was higher at Site 2 than the dam, but not quite double. The highest seasonal chlorophyll value for each site occurred on different August sampling dates.

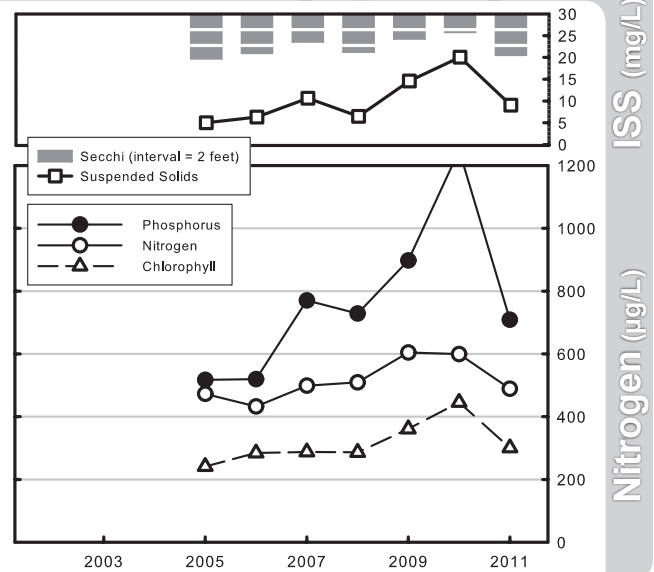
Site 2 has been monitored since 2005. Long-term trends mimic those observed at Site 1, but with higher concentrations of nutrients, chlorophyll and suspended sediment.



## 2011 GRAPHS



## TREND GRAPHS



See page 3 for help interpreting graphs