

# Pomme de Terre Lake



# Site 1

## 2009 DATA

Hickory and Polk County  
 Latitude: 37.892 Longitude: -93.3108

Date	4/22	5/11	6/1	6/23	7/16	8/6	8/29	9/27	Mean
Secchi (inches)		56	49	54	42	48	45	59	50
TP (µg/L)		35	38	19	19	21	21	22	24
TN (µg/L)		650	590	520	440	470	460	400	498
CHL (µg/L)	2.9	23.6	17.0	9.3	20.4	19.1	23.0	22.5	14.7
ISS (mg/L)	0.9	2.7	1.6	0.5	1.1	1.2	0.6	0.9	1.0

Pomme de Terre Lake was sampled eight times at 3 sites in 2009.

At 50 inches, water clarity at the Pomme de Terre dam was nearly a foot greater than the state-wide mean of 39 inches. Concentrations of both nutrients decreased as the season progressed, though the chlorophyll concentration was consistent throughout much of the season. The ratio of chlorophyll (algae) to phosphorus (the nutrient primarily responsible for algal growth) reached 1:1 in July, where it remains for the rest of the season. A chlorophyll to phosphorus ratio this high indicates either an algae bloom or at the least favorable conditions for a bloom to develop. Suspended sediments were low throughout most of 2009, averaging 1 mg/L.

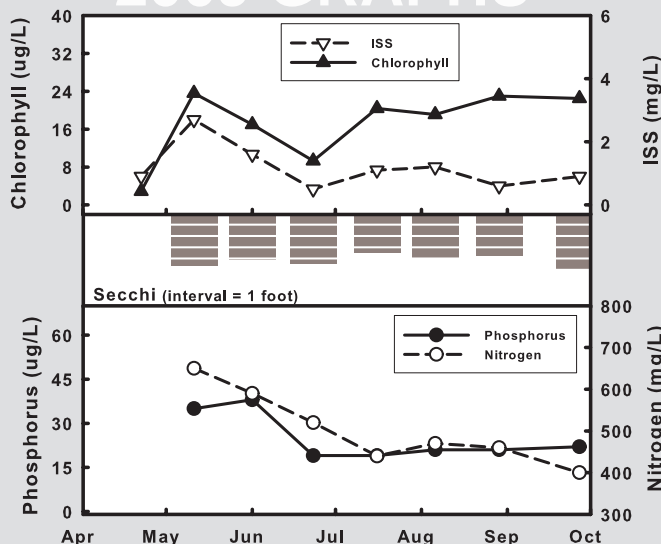
2008 was the only year that phosphorus concentrations deviated significantly from the long-

term mean. The long-term phosphorus concentration is lower than the value established by the recently adopted nutrient criteria. The long-term nitrogen concentration is slightly higher than nutrient criteria indicate it should be. This means that the lake has been placed on the draft impaired waters list for having excess nitrogen. The long-term chlorophyll concentration (graph not shown) slightly exceeds the nutrient criteria, landing Pomme de Terre on the draft impaired waters list for chlorophyll as well.

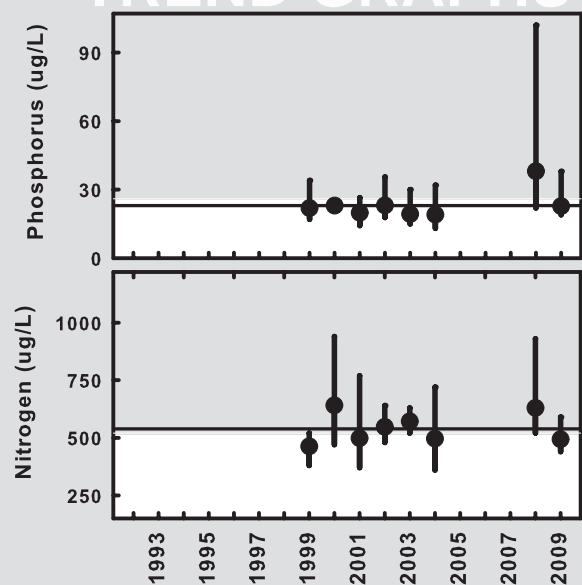
Pomme de Terre Lake sampling sites



## 2009 GRAPHS



## TREND GRAPHS



See pages 10-11 for help interpreting graphs

# Pomme de Terre Lake



# Site 3

## 2009 DATA

Hickory and Polk County  
 Latitude: 37.8357 Longitude: -93.2636

Date	4/22	5/11	6/1	6/23	7/16	8/6	8/29	9/27	Mean
Secchi (inches)	12	6	22	28	18	18	22	24	17
TP (µg/L)		252	80	57	79	97	88	86	94
TN (µg/L)		1170	760	670	770	780	690	690	777
CHL (µg/L)	19.0	6.9	34.3	18.5	55.4	44.2	33.9	42.5	27.1
ISS (mg/L)	29.6	24.1	7.2	3.9	6.2	9.5	6.5	6.9	9.2

Pomme de Terre Lake sampling sites

Site 3 is located near the boat ramp at the Pittsburgh Public Use Area on the Lindley Creek arm.

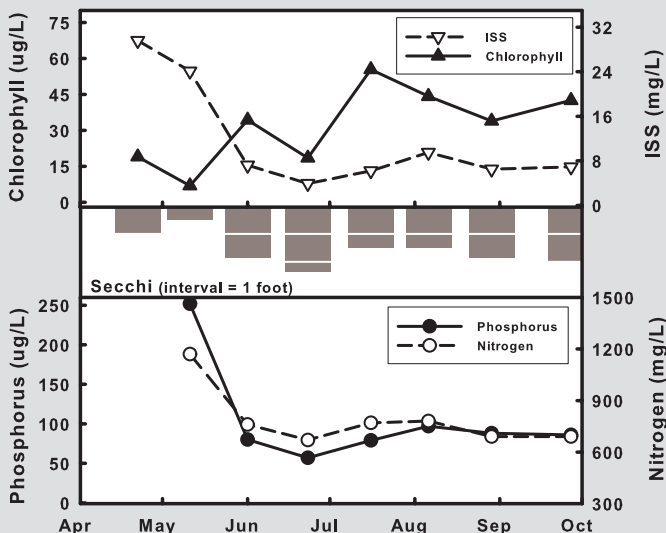
Water clarity at this site is low, with an average Secchi transparency value of 1 ½ feet. Extremely turbid water on May 11 (Secchi = 6 inches) was likely due to the excessive rainfall 2 days prior to sampling (2.2 inches). Phosphorus concentrations at Site 3 are quite high, with a seasonal mean almost 4 times greater than found at the dam, and a single measurement of over 250 µg/L (May 11). The ratios of nitrogen to phosphorus at Site 3 were low, indicating the presence of abundant phosphorus. The abundant phosphorus was likely due to high concentrations of suspended sediment particles (ISS) throughout the season. ISS

particles typically have phosphorus molecules bound to their surfaces. When ISS values fell to below 10 on June 1, chlorophyll concentrations increased as sunlight penetrated deeper into the water column and facilitated additional algae growth.



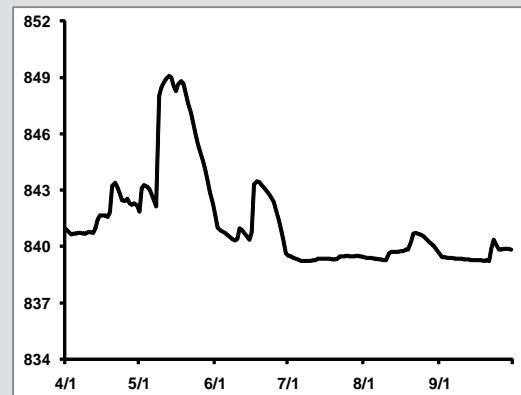
Not enough data exist at this site to generate a trend graph.

## 2009 GRAPHS



## TREND GRAPHS

Pomme de Terre Lake levels for the 2009 sampling season



See pages 10-11 for help interpreting graphs

# Pomme de Terre Lake



# Site 4

## 2009 DATA

Hickory and Polk County  
 Latitude: 37.8337 Longitude: -93.3629

Date	4/22	5/11	6/1	6/23	7/16	8/6	8/29	9/27	Mean
Secchi (inches)	18	12	27	24	28	34	37	36	25
TP (µg/L)	94	132	46	48	51	29	27	32	49
TN (µg/L)	860	1060	570	620	730	520	450	440	628
CHL (µg/L)	21.4	15.4	23.5	18.5	32.6	21.8	27.4		22.4
ISS (mg/L)	17.9	11.9	5.4	7.8	3.4	1.9	2.6	1.3	4.6

Pomme de Terre Lake sampling sites

Site 4 is located in the Pomme de Terre River Arm

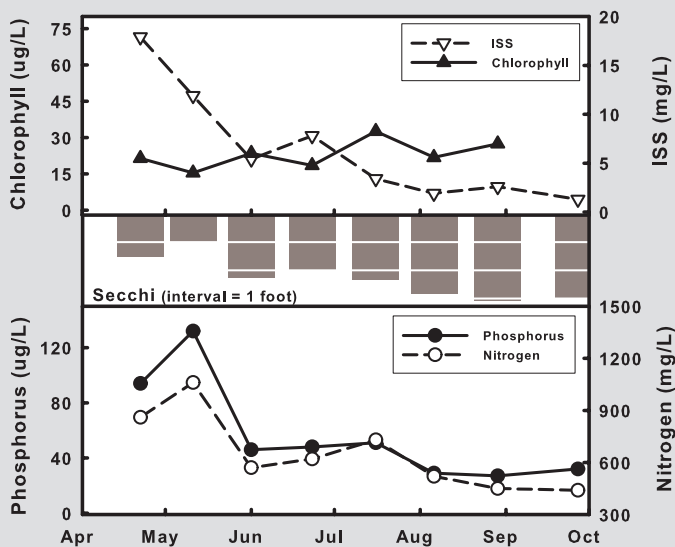
Phosphorus and suspended sediment concentrations at Site 4 are roughly half that of Site 3. This translates into 8 inches more clarity on average for 2009 at Site 4. Nitrogen and chlorophyll concentrations averaged around 20% lower than at Site 3. Though nutrients, algae and sediment concentrations are lower (and water clarity higher) at Site 4 than at Site 3, all values are still considerably higher than at the dam (and water clarity lower). Sites 3 and 4 are both up-lake sites but differences in flow, depth and watershed

area at the sampling locations prevent direct comparisons of the two arms of the lake using this data alone. Additional sites or data sources would help in making comparisons.

Only 2 years of data exist for this site, not enough to generate a meaningful trend graph.

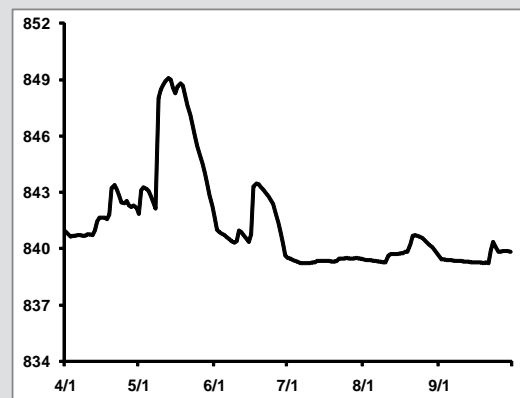


## 2009 GRAPHS



## TREND GRAPHS

Pomme de Terre Lake levels for the 2009 sampling season



See pages 10-11 for help interpreting graphs