

APPENDIX A - WATER QUALITY DATA – BY LAKE

Brown's Creek Watershed Lakes: Bass East, Bass West, Benz, Goggin's, July Avenue, Kismet, Jackson WMA, Long (North, Middle, and South Basins), Lynch North, Lynch South, Masterman, Pat, Plaisted, South School Section, and Wood Pile

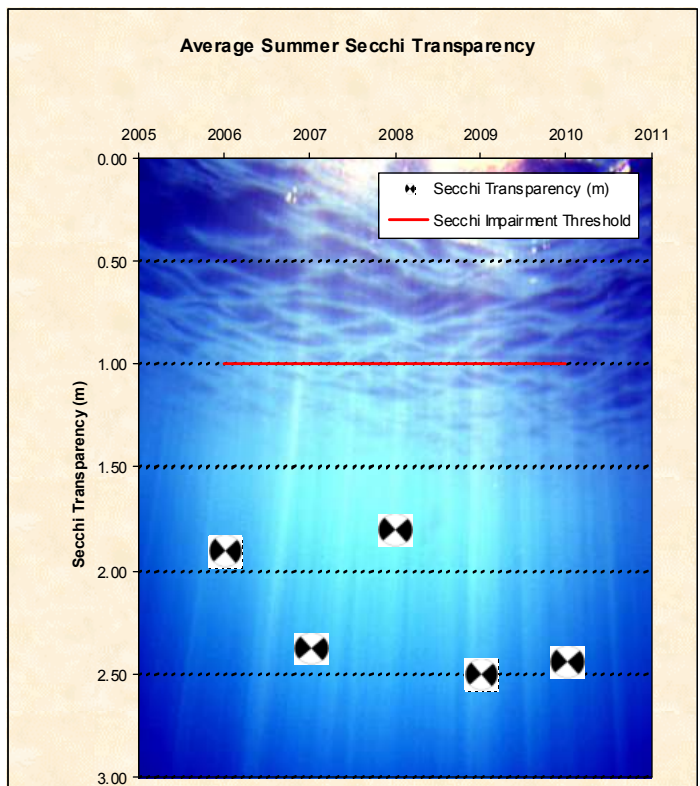
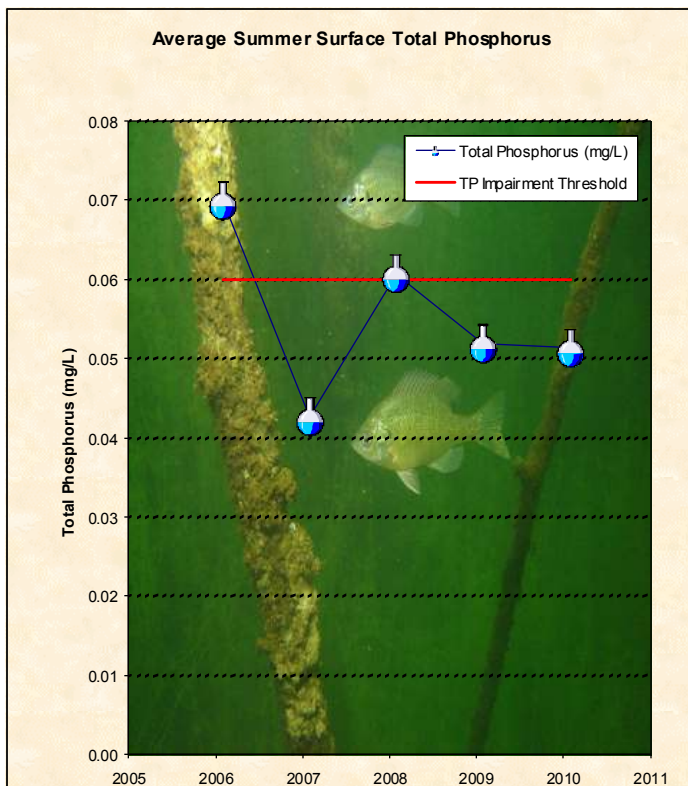
Bass Lake (East) 2010 Lake Grade: B

- DNR ID #: 820124
 - Municipality: City of Grant
 - Location: Section 10, T30N-R21W
 - Lake Size: 29 Acres
 - Maximum Depth (2010): 12 ft
 - Ordinary High Water Mark: 960.20 ft
 - 100-Year High Water Level: 960.40 ft
 - 100% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



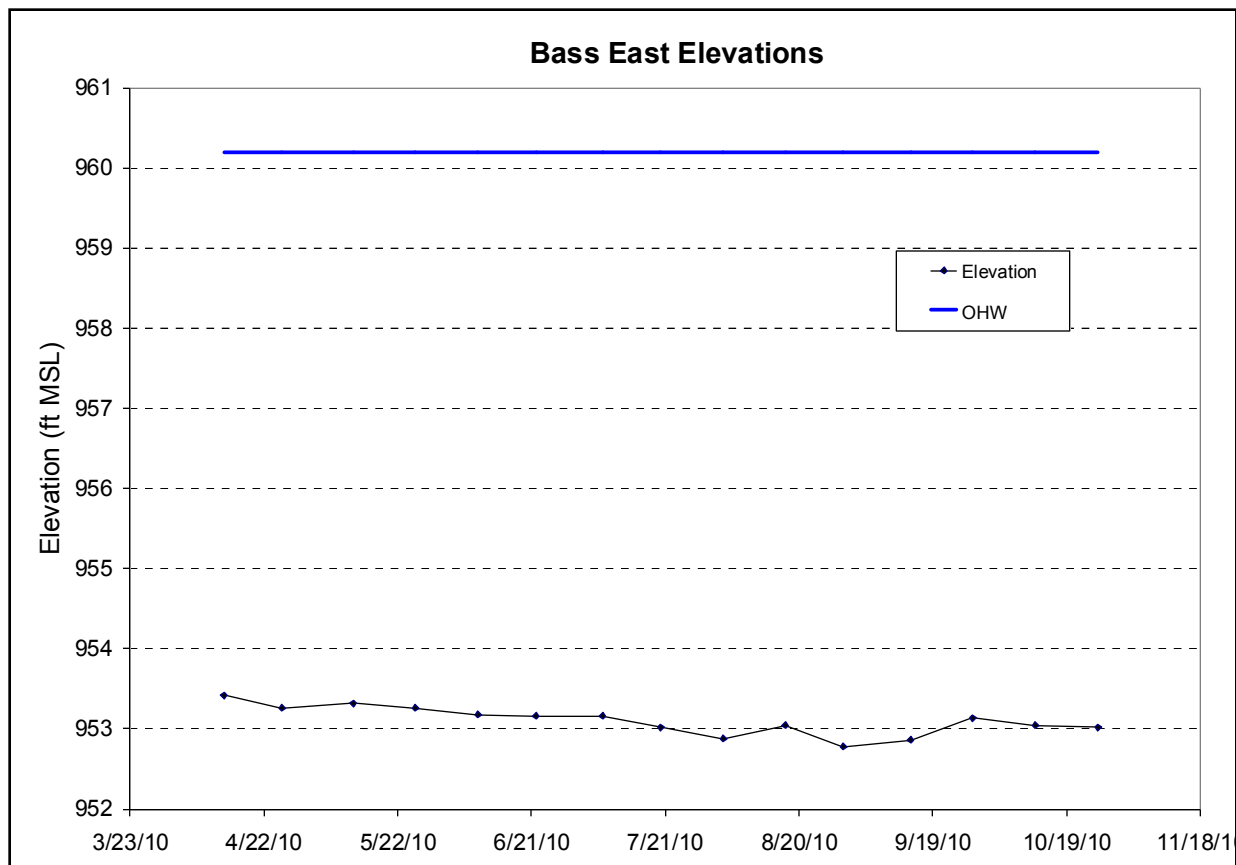
Summary Points

- Bass Lake (East) was considered a mesotrophic lake in 2010, based on the Carlson Trophic State Index.
- At this time there are not enough years of data to determine a statistically significant overall water quality trend.
- The major land use is rural/agricultural.
- The lake stratified in 2010 with a thermocline varying between 1-2 meters.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/12/2010	0.035	6	0.92	2.59	11.14	14.0
4/26/2010	0.029	7	0.79	2.74	8.90	14.3
5/12/2010	0.098	10	0.79	3.35	9.68	11.1
5/26/2010	0.032	5	0.79	2.74	8.21	26.4
6/9/2010	0.059	6	1.00	2.29	5.95	20.6
6/22/2010	0.052	6	0.94	2.44	8.84	24.1
7/7/2010	0.067	9	1.10	2.13	7.12	27.8
7/20/2010	0.092	18	1.50	1.83	5.74	25.5
8/3/2010	0.073	6	1.70	2.13	6.24	26.7
8/17/2010	0.037	12	1.30	1.83	5.70	23.1
8/30/2010	0.048	10	1.50	1.98	8.90	25.6
9/14/2010	0.028	4	1.10	3.35	9.74	20.4
9/28/2010	0.025	3	0.96	3.66	9.99	15.7
10/12/2010	0.034	11	1.20	2.90	11.29	17.7
2010 Average	0.051	8	1.11	2.57	8.39	20.9
2010 Summer Average	0.051	8	1.19	2.44	7.64	23.6
Water quality thresholds are 0.04 mg/L TP, 14 ug/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 ug/L CL-a, 1.0 m Secchi depth*						
2010 Elevation (ft)	High	High Date	Low	Low Date	Average	
	953.42	4/13/2010	952.78	8/30/2010	953.10	

*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."



Lake Water Quality Summary												
	Trophic Status		Summertime Lake Grades									
	2010		2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Eutrophic		C	C	C	C	D	NA	NA	NA	NA	NA
Chlorophyll-a (ug/l)	Mesotrophic		A	B	C	B	B	NA	NA	NA	NA	NA
Secchi disk (ft)	Mesotrophic		B	B	C	B	C	NA	NA	NA	NA	NA
Overall	Mesotrophic		B	B-	C	B-	C	NA	NA	NA	NA	NA

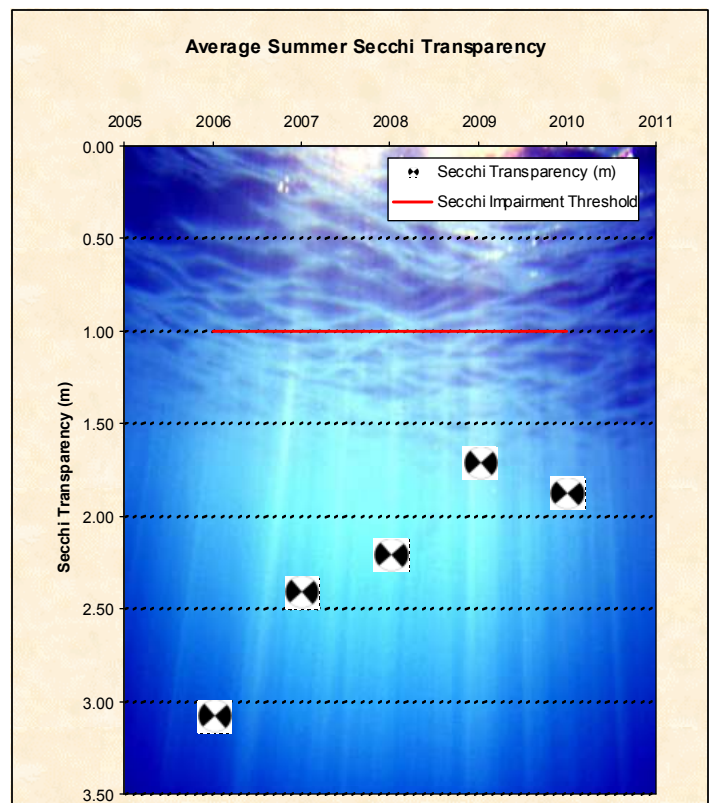
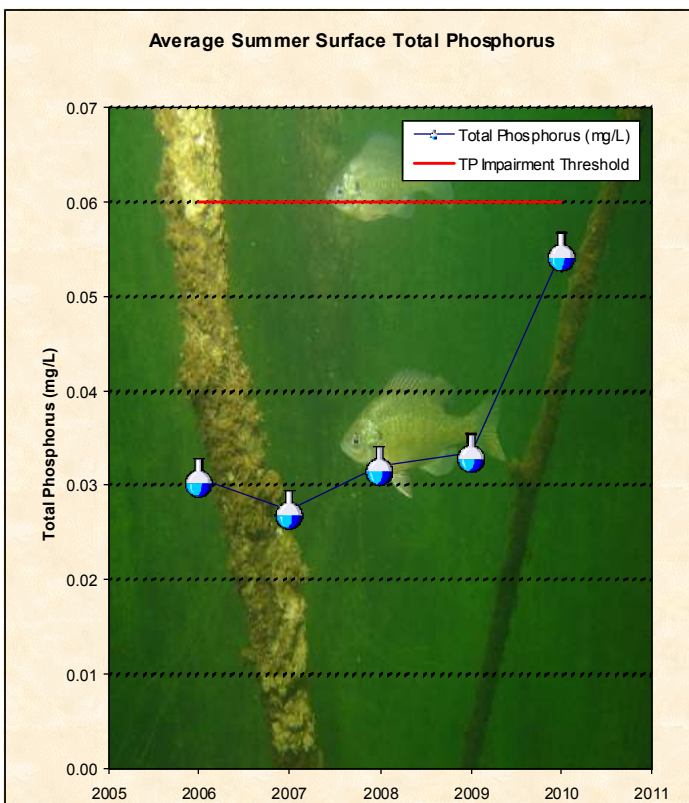
Bass Lake (West) 2010 Lake Grade: C+

- DNR ID #: 820123
 - Municipality: City of Grant
 - Location: Section 10, T30N-R21W
 - Lake Size: 72 Acres
 - Maximum Depth (2010): 9 ft
 - Ordinary High Water Mark: 952.60 ft
 - 100-Year High Water Level: 955.90 ft
 - 100% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



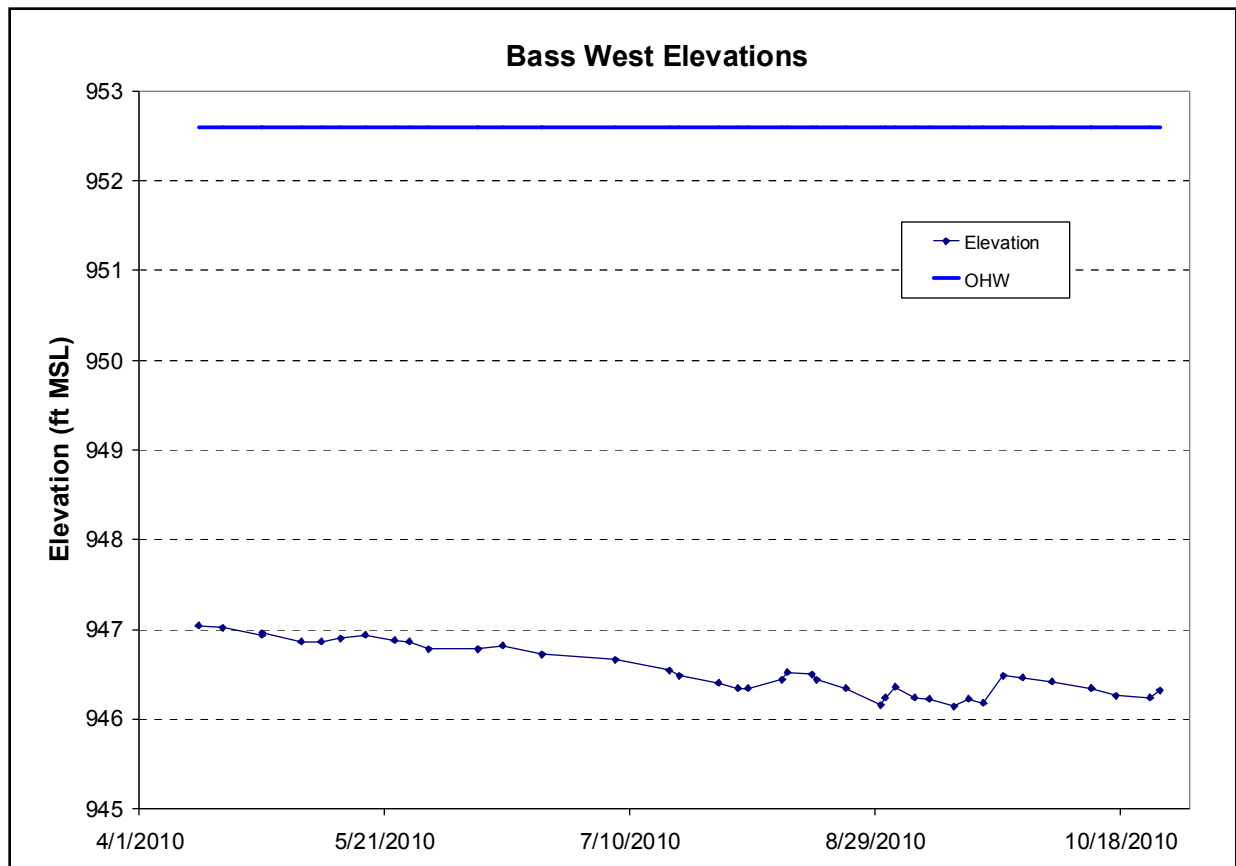
Summary Points

- Bass Lake (West) was considered a eutrophic lake in 2010, based on the Carlson Trophic State Index.
- At this time there are not enough years of data to determine a statistically significant overall water quality trend.
- The major land use is rural/agricultural.
- The lake did not stratify in 2010.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/12/2010	0.085	47	1.40	1.37	12.64	13.4
4/26/2010	0.024	7.6	0.74	1.37	9.24	14.1
5/12/2010	0.017	3.2	0.63	2.13	10.62	10.9
5/26/2010	0.027	5.0	0.82	2.29	9.17	26.3
6/9/2010	0.039	6.9	0.99	1.22	3.74	20.0
6/22/2010	0.031	4.8	0.71	2.13	8.62	23.2
7/7/2010	0.063	4.3	1.10	2.29	6.62	26.7
7/20/2010	0.129	4.5	1.80	2.13	3.74	24.8
8/3/2010	0.041	13	1.20	1.37	5.15	26.1
8/17/2010	0.033	18	1.30	1.98	5.08	22.9
8/30/2010	0.102	84	1.60	1.22	7.39	25.0
9/14/2010	0.052	26	1.20	2.29	8.33	20.1
9/28/2010	0.031	2.2	3.10	1.83	9.78	15.8
10/12/2010	0.029	4.2	1.00	2.29	10.15	17.3
2010 Average	0.050	17.9	1.26	1.85	7.88	20.47
2010 Summer Average	0.055	18.9	1.38	1.87	6.76	23.09
Water quality thresholds are 0.04 mg/L TP, 14 ug/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 ug/L CL-a, 1.0 m Secchi depth*						
2010 Elevation (ft)	High	High Date	Low	Low Date	Average	
	947.04	4/13/2010	946.14	9/14/2010	946.55	

*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."



	Lake Water Quality Summary										
	Trophic Status	Summertime Lake Grades									
	2010	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Eutrophic	C	C	B	B	B	NA	NA	NA	NA	NA
Chlorophyll-a (ug/l)	Eutrophic	B	B	B	B	A	NA	NA	NA	NA	NA
Secchi disk (ft)	Mesotrophic	C	C	B	B	A	NA	NA	NA	NA	NA
Overall	Eutrophic	C+	C+	B	B	A-	NA	NA	NA	NA	NA

Benz Lake

2010 Lake Grade: D

- DNR ID #: 820120
- Municipality: City of Grant
- Location: SE^{1/4} Section 2, T30N-R21W
- Lake Size: 40 Acres
- Maximum Depth (2010): 7 ft
- Ordinary High Water Mark: 954.07 ft*
- 100-Year High Water Level: 955.30 ft
- 100% Littoral

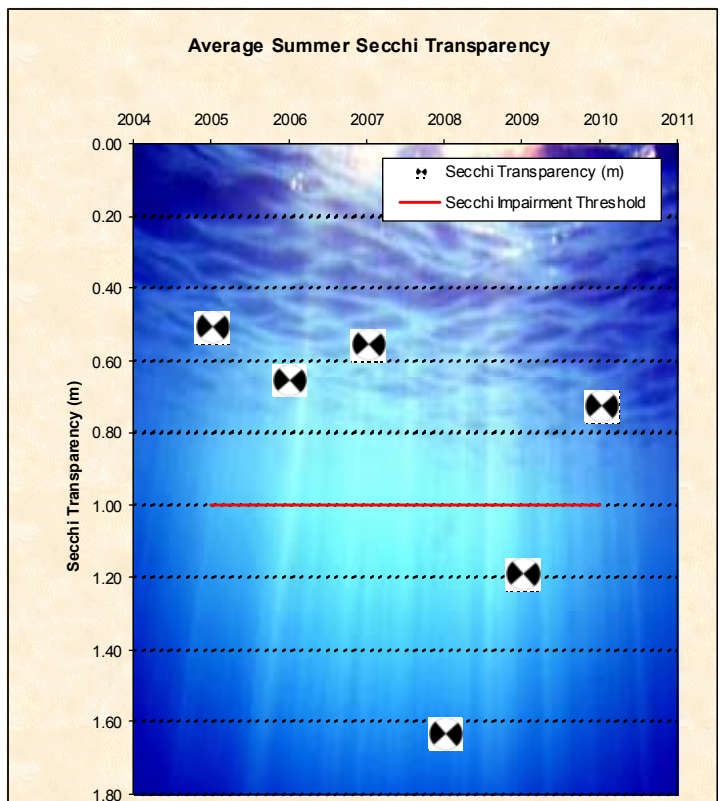
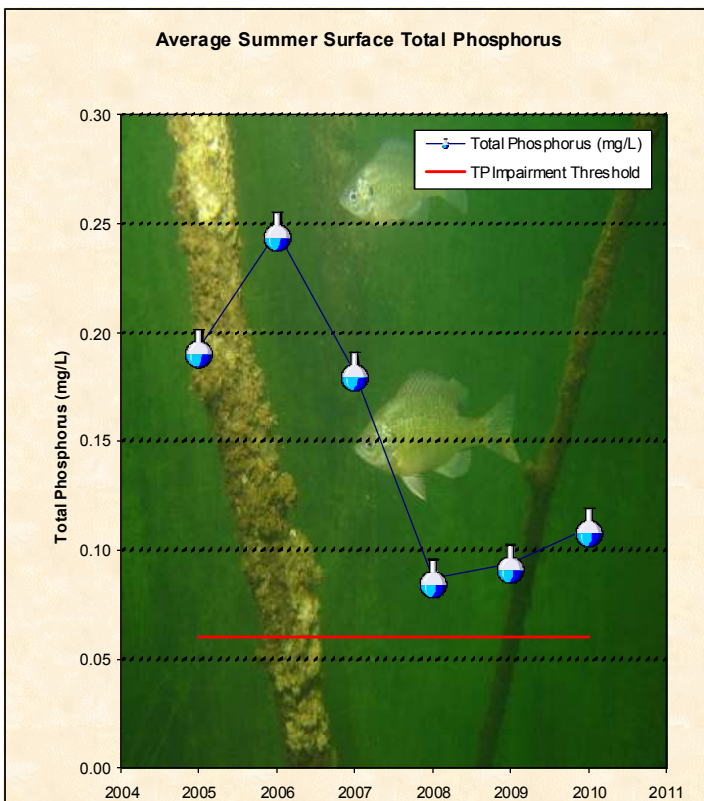
Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.

*Reduced by 4.84 feet due to benchmark error



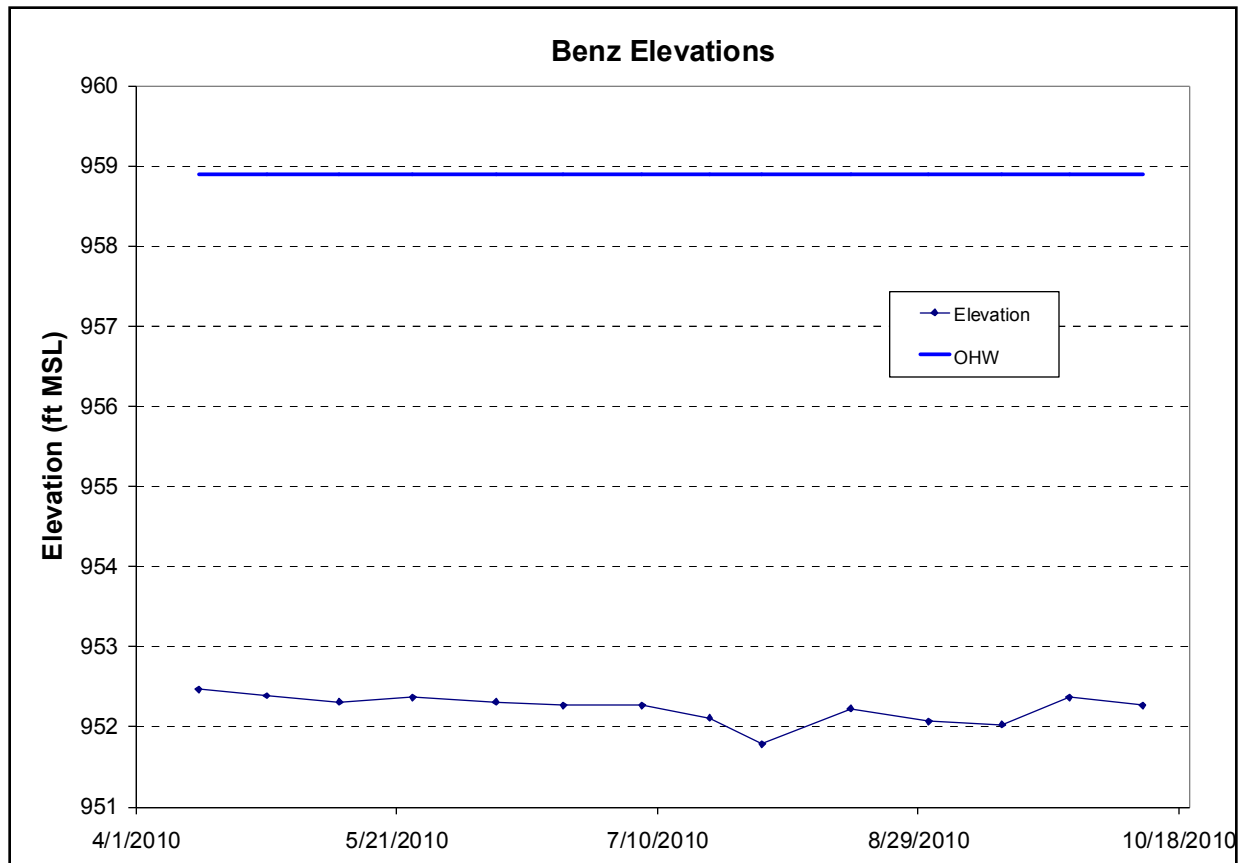
Summary Points

- Benz Lake was considered a hypereutrophic lake in 2010, based on the Carlson Trophic State Index.
- There is a statistically significant **improving trend** for average total phosphorus and no trend can be determined for average Secchi transparency.
- The major land use is rural/agricultural.
- The lake did not stratify in 2010.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/12/2010	0.037	7	1.10	1.83	10.85	14.7
4/26/2010	0.049	14	1.20	1.52	8.46	14.5
5/10/2010	0.048	10	1.20	1.52	10.57	13.2
5/24/2010	0.078	20	1.60	1.37	8.61	26.0
6/9/2010	0.150	45	1.90	0.91	7.03	20.8
6/22/2010	0.072	16	1.50	1.22	11.69	24.3
7/7/2010	0.094	27	1.80	0.91	12.30	30.1
7/20/2010	0.125	68	2.30	0.46	9.54	25.5
8/2/2010	0.083	51	1.70	0.76	9.43	27.3
8/16/2010	0.109	56	2.00	0.61	10.41	24.5
8/31/2010	0.108	40	2.30	0.61	11.34	27.8
9/14/2010	0.127	120	2.90	0.46	13.52	18.6
9/27/2010	0.122	100	3.10	0.61	10.42	16.3
10/11/2010	0.084	15	2.00	1.83	12.82	18.4
2010 Average	0.092	42	1.90	1.05	10.50	21.57
2010 Summer Average	0.110	58	2.17	0.73	10.63	23.91
Water quality thresholds are 0.04 mg/L TP, 14 ug/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 ug/L CL-a, 1.0 m Secchi depth*						
2010 Elevation (ft)	High	High Date	Low	Low Date	Average	
	952.47	4/13/2010	951.79	7/30/2010	952.23	

*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."



Lake Water Quality Summary											
	Trophic Status	Summertime Lake Grades									
	2010	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Hypereutrophic	D	D	D	F	F	F	NA	NA	NA	NA
Chlorophyll-a (ug/l)	Hypereutrophic	D	C	C	F	D	F	NA	NA	NA	NA
Secchi disk (ft)	Hypereutrophic	D	D	C	F	F	F	NA	NA	NA	NA
Overall	Hypereutrophic	D	D+	C-	F	F+	F	NA	NA	NA	NA

Goggin's Lake

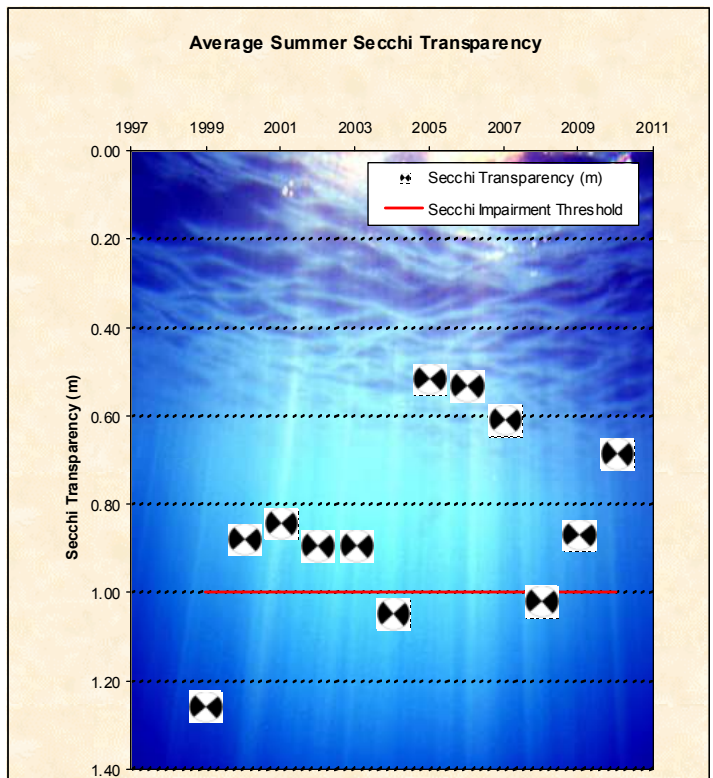
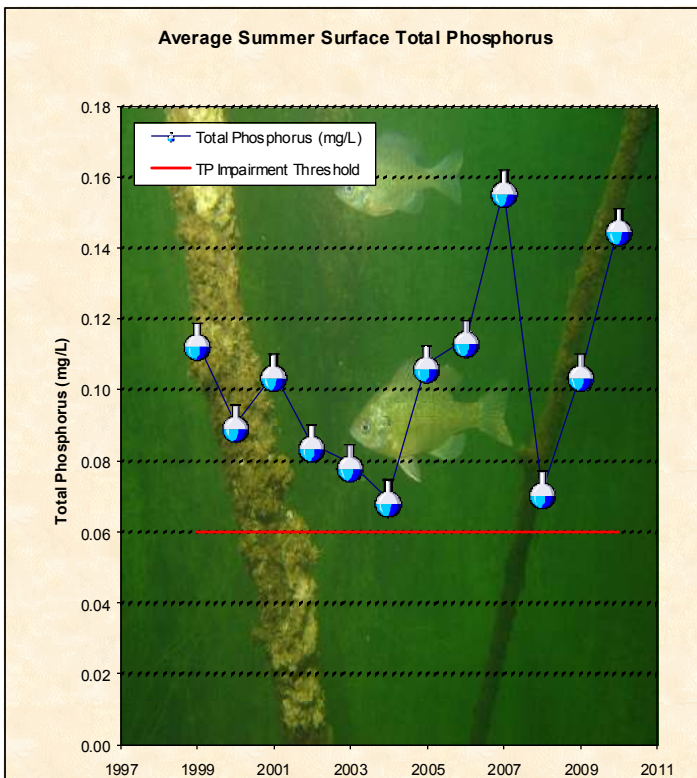
2010 Lake Grade: D-

- DNR ID #: 820077
 - Municipality: May Township
 - Location: NW^{1/4} Section 31, T31N-R20W
 - Lake Size: 85 Acres
 - Maximum Depth (2010): 8 ft
 - Ordinary High Water Mark: 966.50 ft
 - 100-Year High Water Level: 972.20 ft
 - 100% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



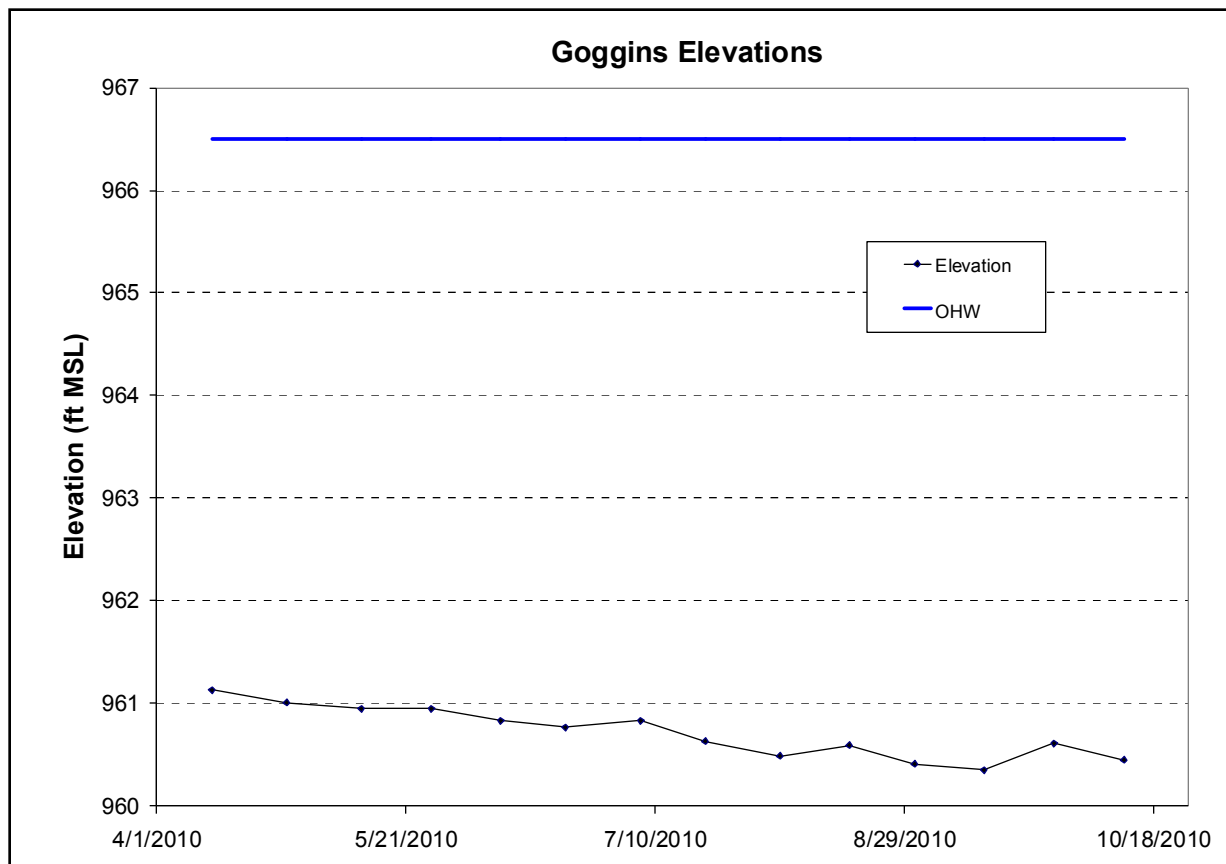
Summary Points

- Goggin's Lake was considered a hypereutrophic lake in 2010, based on the Carlson Trophic State Index.
- There is a statistically significant **declining trend** for average Secchi transparency and no trend can be determined for average total phosphorus.
- The major land use is rural/agricultural.
- The lake did not stratify in 2010.
- Goggin's Lake is listed as impaired for nutrients on the Minnesota Pollution Control Agency's Impaired Waters List.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/12/2010	0.059	16	1.60	1.22	12.63	13.1
4/27/2010	0.073	12	1.90	1.37	9.45	14.1
5/12/2010	0.065	15	1.50	1.37	10.55	10.5
5/26/2010	0.069	7.5	1.70	1.83	8.35	24.3
6/9/2010	0.092	20	3.60	1.37	6.89	20.8
6/22/2010	0.098	40	3.00	0.76	14.55	24.4
7/7/2010	0.152	120	3.40	0.46	11.05	27.0
7/20/2010	0.206	81	3.60	0.61	9.80	26.9
8/4/2010	0.149	100	5.00	0.46	8.93	26.7
8/18/2010	0.154	120	4.00	0.46	8.77	23.1
8/31/2010	0.195	87	4.00	0.30	10.08	26.2
9/14/2010	0.179	120	4.00	0.30	10.62	19.7
9/28/2010	0.165	87	4.00	0.30	8.20	15.3
10/12/2010	0.141	70	3.70	0.46	12.49	17.6
2010 Average	0.128	64	3.21	0.81	10.17	20.7
2010 Summer Average	0.146	78	3.63	0.69	9.72	23.4
Water quality thresholds are 0.04 mg/L TP, 14 ug/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 ug/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	961.13	4/12/2010	960.35	9/14/2010	960.71	

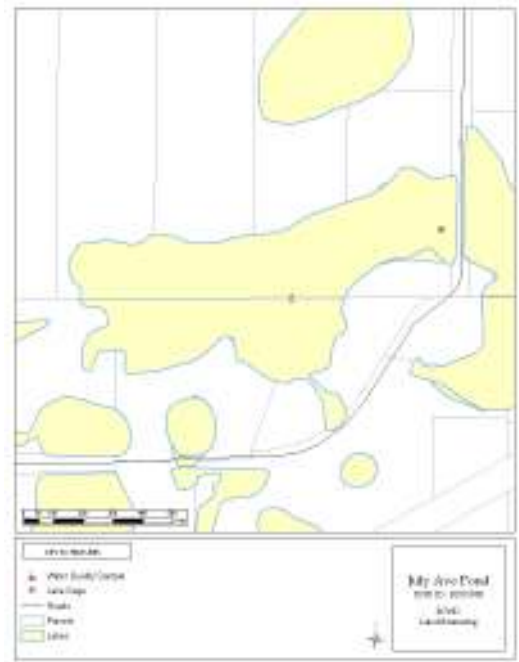
*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."



Lake Water Quality Summary											
	Trophic Status	Summertime Lake Grades									
	2010	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Hypereutrophic	D	D	D	F	D	D	D+	D+	D	D
Chlorophyll-a (ug/l)	Hypereutrophic	D	C	C	F	C	D+	C	C	C	C
Secchi disk (ft)	Hypereutrophic	F	D	D	F	F	D	D	D	D	D
Overall	Hypereutrophic	D-	D+	D+	F	D	D	D+	D+	D+	D+

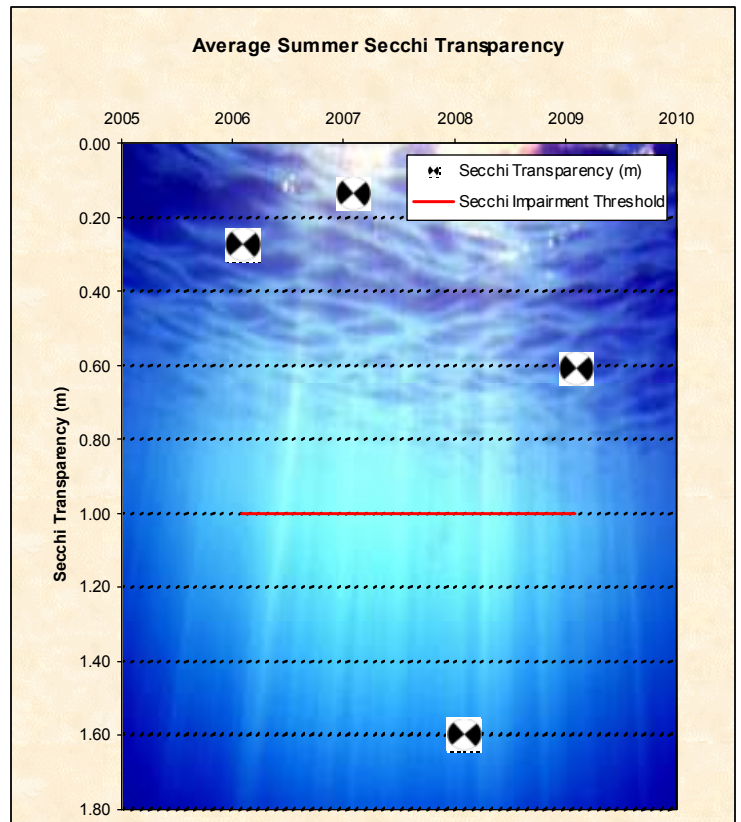
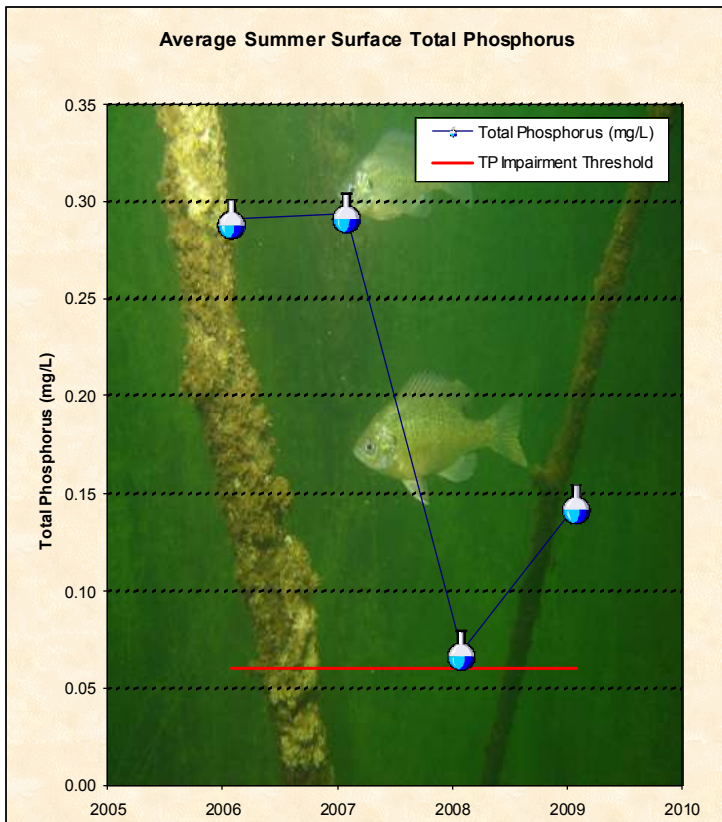
July Ave Pond 2010 Lake Grade: NA

- DNR ID #: 820318
 - Municipality: City of Grant
 - Location: Section 3, T30N-R21W
 - Lake Size: 12 Acres
 - Maximum Depth: 7.50 ft
 - Ordinary High Water Mark: NA
 - 100-Year High Water Level: 979.20 ft
 - 100% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



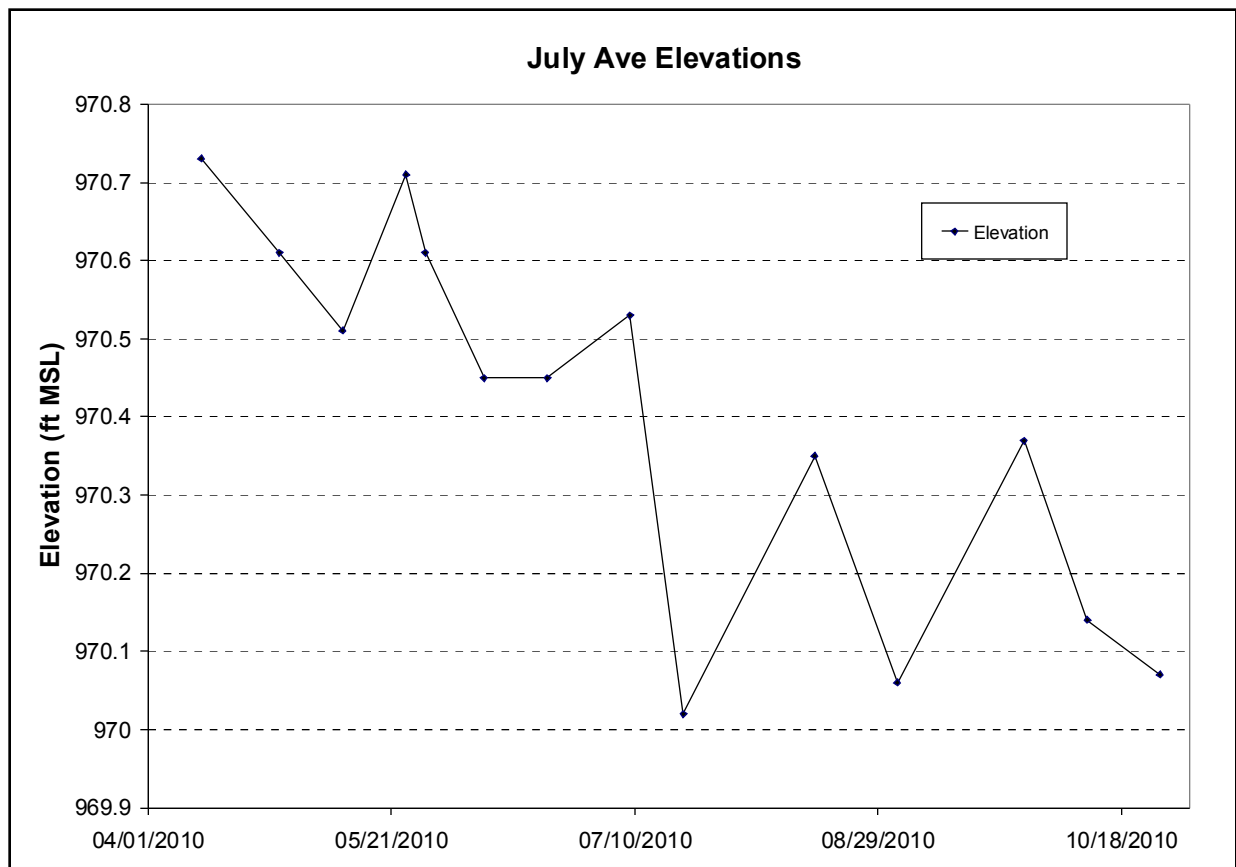
Summary Points

- The elevation of July Ave Pond never became high enough to monitor for water quality parameters during the 2010 monitoring season.
- At this time there are not enough years of data to determine a statistically significant overall water quality trend.
- The major land use is rural/agricultural.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
2010 Average	NA	NA	NA	NA	NA	NA
2010 Summer Average	NA	NA	NA	NA	NA	NA
Water quality thresholds are 0.04 mg/L TP, 14 µg/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 µg/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	970.73	4/12/2010	970.02	7/20/2010	970.40	

*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."



	Lake Water Quality Summary											
	Trophic Status	Summertime Lake Grades										
	2010	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	
Total Phosphorus (mg/l)	NA	NA	D	D	F	F	NA	NA	NA	NA	NA	
Chlorophyll-a (ug/l)	NA	NA	D	B	F	F	NA	NA	NA	NA	NA	
Secchi disk (ft)	NA	NA	F	C	F	F	NA	NA	NA	NA	NA	
Overall	NA	NA	D-	C	F	F	NA	NA	NA	NA	NA	

Kismet Basin

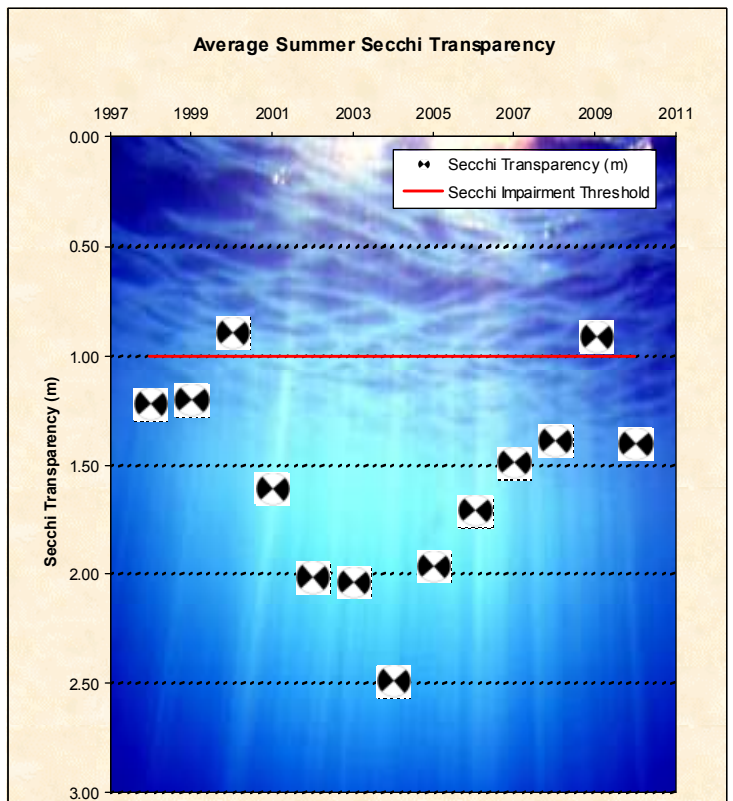
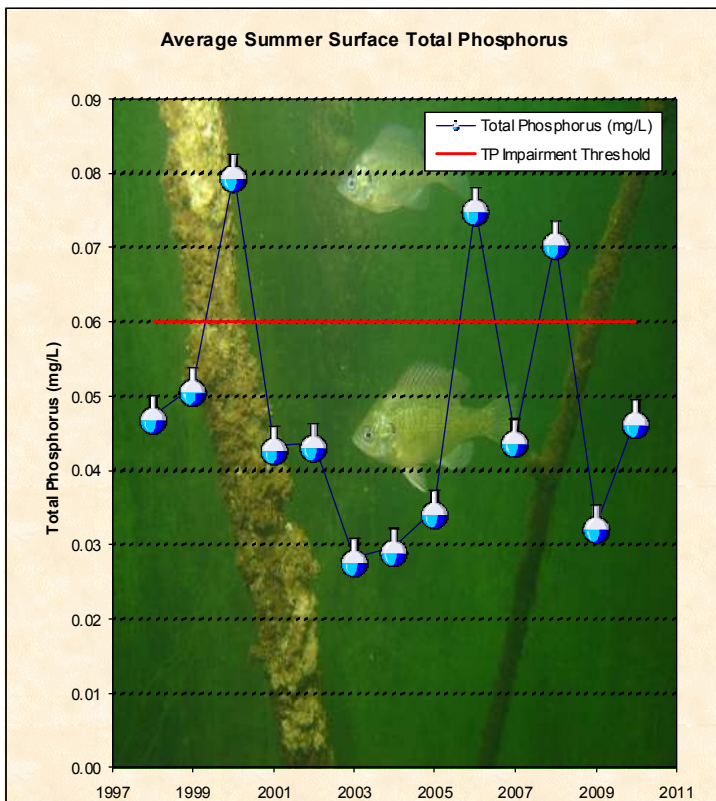
2010 Lake Grade: C

- DNR ID #: 820334
 - Municipality: City of Grant
 - Location: S^{1/2} Section 11, T30N-R21W
 - Lake Size: 70 Acres
 - Maximum Depth (2010): 6 ft
 - Ordinary High Water Mark: 943.50 ft
 - 100-Year High Water Level: 944.90 ft
 - 100% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



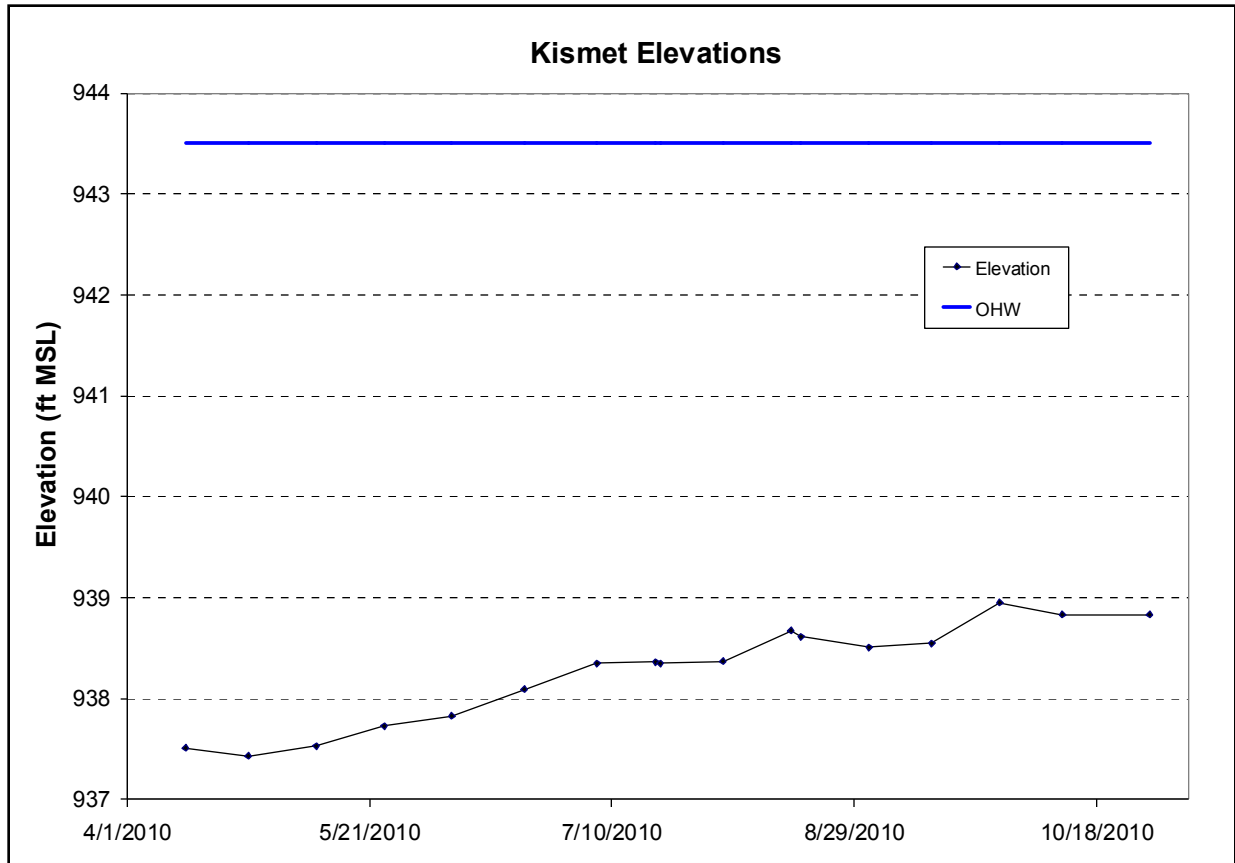
Summary Points

- Kismet Basin was considered a eutrophic lake in 2010, based on the Carlson Trophic State Index.
- At this time no statistically significant trend can be determined for water quality.
- The major land use is rural/agricultural.
- The lake did not stratify in 2010.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/12/2010	0.031	18	0.9	0.91	12.25	16.0
4/26/2010	0.032	10	0.72	0.61	9.15	14.0
5/10/2010	0.027	16	0.76	1.37	13.88	14.1
5/24/2010	0.037	13	0.93	1.22	12.15	27.3
6/7/2010	0.032	2	0.81	0.91	10.32	24.4
6/22/2010	0.029	8	0.76	1.52	6.86	24.0
7/7/2010	0.069	69	1.10	1.22	7.98	27.0
7/20/2010	0.051	28	0.97	1.37	3.93	24.5
8/2/2010	0.044	17	0.87	1.07	6.7	27.0
8/16/2010	0.055	27	1.10	1.52	3.98	24.2
9/1/2010	0.063	16	1.20	1.52	5.7	25.3
9/14/2010	0.030	9	0.74	1.68	6.57	18.4
9/28/2010	0.049	26	0.98	1.83	7.11	15.0
10/11/2010	0.030	14	0.86	1.68	10.25	17.8
2010 Average	0.041	20	0.91	1.32	8.35	21.4
2010 Summer Average	0.047	22	0.95	1.41	6.57	23.3
Water quality thresholds are 0.04 mg/L TP, 14 ug/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 ug/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	938.95	9/28/2010	937.43	4/26/2010	938.26	

*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."



	Lake Water Quality Summary														
	Trophic Status	Summertime Lake Grades													
	2010	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997
Total Phosphorus (mg/l)	Eutrophic	C	C	D	C	D	C+	B+	B	C	C	D	C-	C	NA
Chlorophyll-a (ug/l)	Eutrophic	C	A	D	C	C	C+	A-	B	B-	C	F	C-	C	NA
Secchi disk (ft)	Eutrophic	C	D	C	C	C	C+	B	C+	C+	C	D	C	C-	NA
Overall	Eutrophic	C	C	D+	C	C-	C+	B+	B-	C+	C	D-	C-	C	NA

Jackson WMA Pond

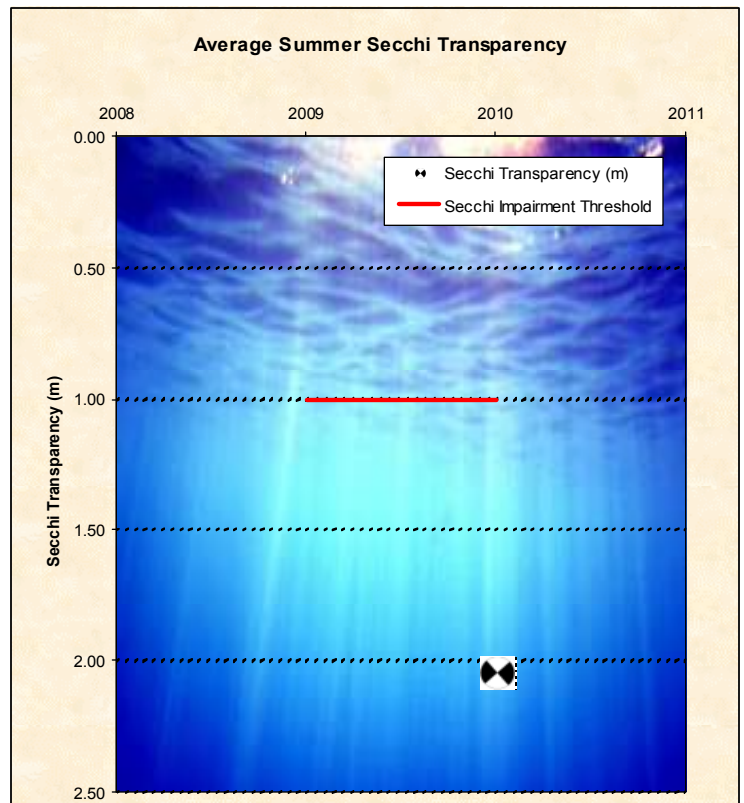
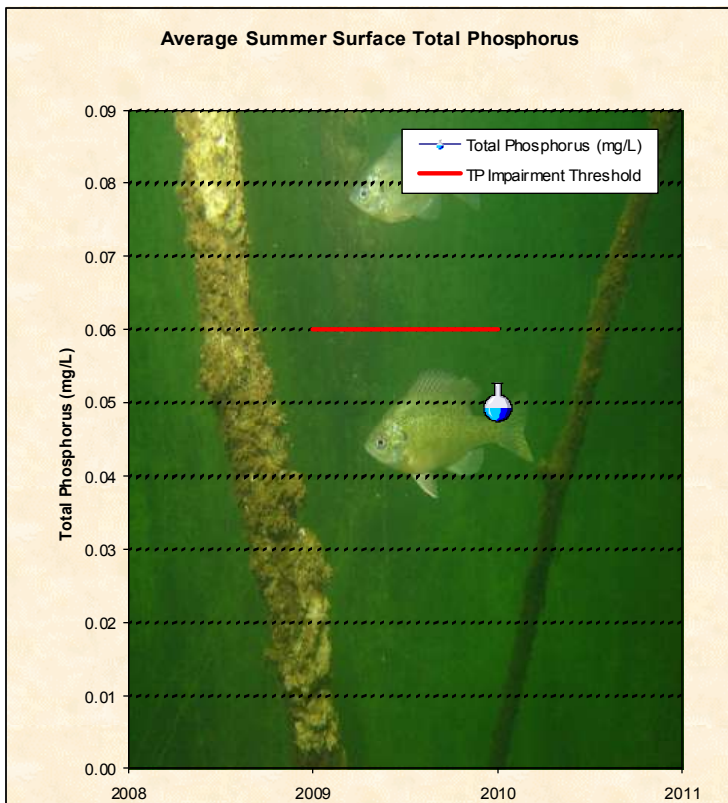
2010 Lake Grade: C+

- DNR ID #: 820305
 - Municipality: City of Stillwater
 - Location: SE^{1/4} Section 30, T30N-R20W
 - Lake Size: 14.3 Acres
 - Maximum Depth (2010): 9 ft
 - Ordinary High Water Mark: NA
 - 100-Year High Water Level: NA
 - 100% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



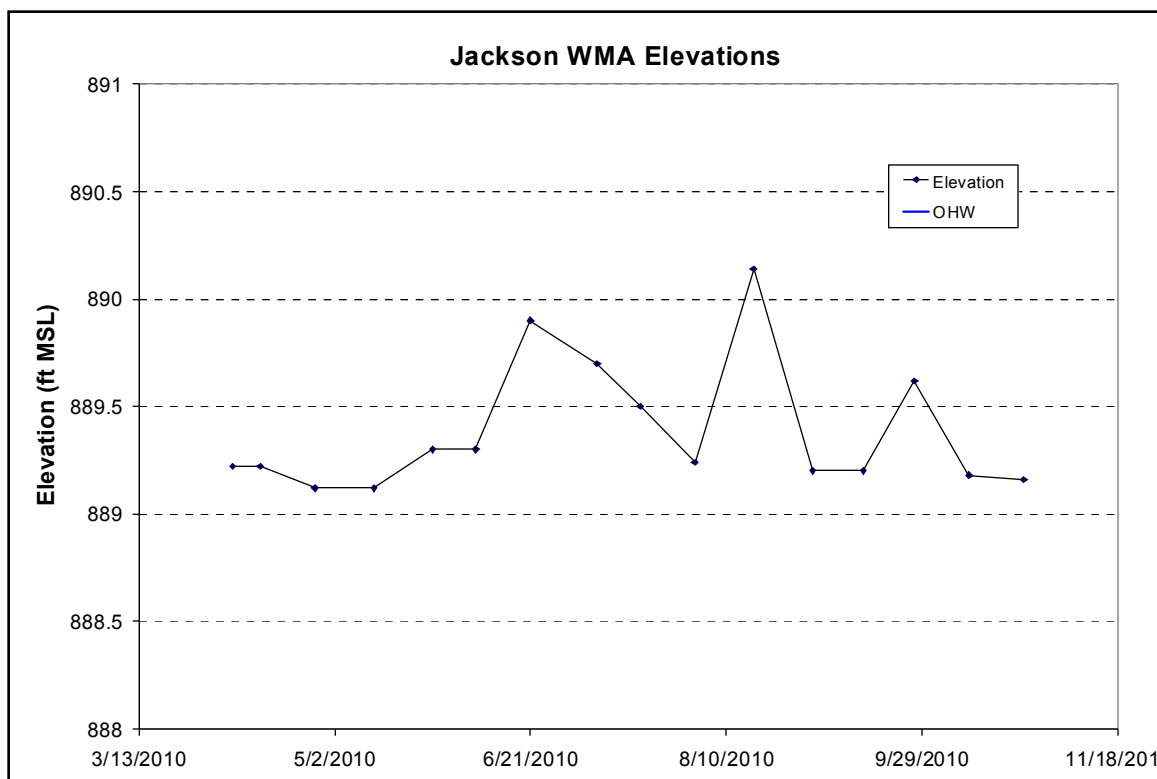
Summary Points

- Jackson WMA Pond was considered a eutrophic lake in 2010, based on the Carlson Trophic State Index.
- At this time there are not enough years of data to determine a statistically significant overall water quality trend.
- The major land use is urban/residential.
- The lake did not stratify in 2010.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/13/2010	0.031	8.7	0.75	2.29	10.09	14.3
4/27/2010	0.044	13	1.1	1.52	9.45	16.1
5/12/2010	0.039	13	0.82	1.83	9.09	11.9
5/27/2010	0.048	5.3	0.93	2.44	9.23	24.0
6/7/2010	0.040	7.2	0.94	2.29	8.98	24.2
6/21/2010	0.028	7.6	0.88	2.44	10.27	23.9
7/8/2010	0.045	10	1.20	2.29	5.02	26.1
7/19/2010	0.050	19	1.30	1.83	6.61	26.2
8/2/2010	0.034	11	1.10	1.83	4.72	26.1
8/17/2010	0.087	33	1.30	1.37	3.57	24.5
9/1/2010	0.046	11	1.20	2.29	6.2	24.9
9/14/2010	0.064	31	1.50	1.68	8.65	19.8
9/27/2010	0.058	6.6	2.30	1.98	6.37	16.0
10/11/2010	0.052	17	1.10	1.22	10.56	19.0
2010 Average	0.048	13.8	1.17	1.95	7.77	21.2
2010 Summer Average	0.050	14.2	1.27	2.04	6.96	23.6
Water quality thresholds are 0.04 mg/L TP, 14 µg/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 µg/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	890.14	8/17/2010	889.12	4/27/2010 5/12/2010	889.38	

*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."



	Lake Water Quality Summary										
	Trophic Status	Summertime Lake Grades									
	2010	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Eutrophic	C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorophyll-a (ug/l)	Eutrophic	B	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Secchi disk (ft)	Mesotrophic	C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Overall	Eutrophic	C+	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

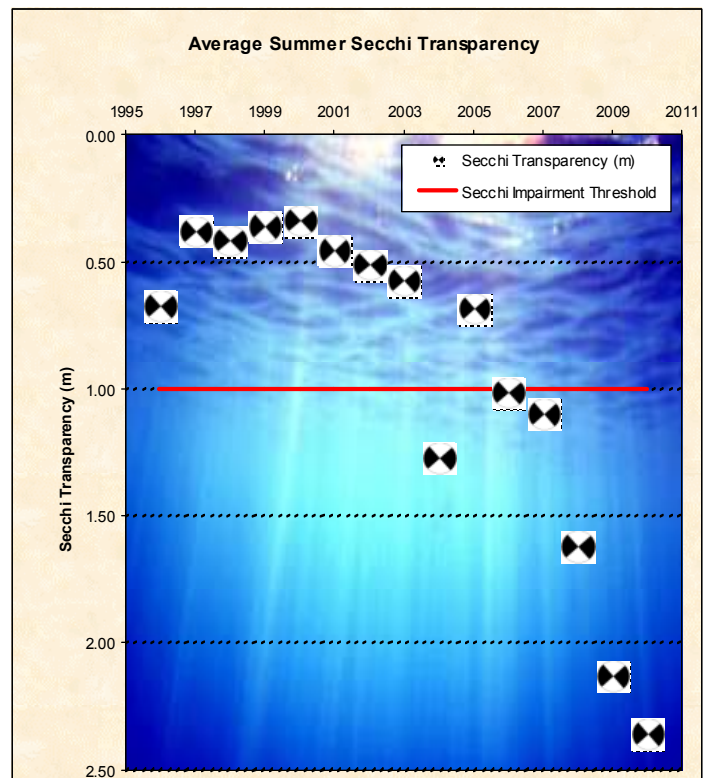
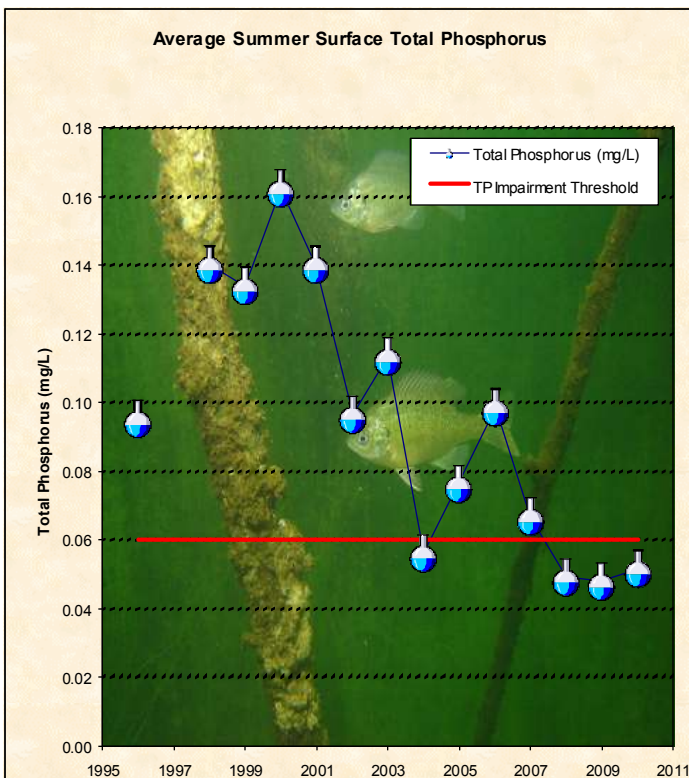
Long Lake 2010 Lake Grade: B-

- DNR ID #: 820021
 - Municipality: City of Stillwater
 - Location: Section 30, T30N-R20W
 - Lake Size: 110 Acres
 - Maximum Basin Depth (2010): 22 ft
 - Ordinary High Water Mark: 891.50 ft
 - 100-Year High Water Level: 893.20 ft
 - 95% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



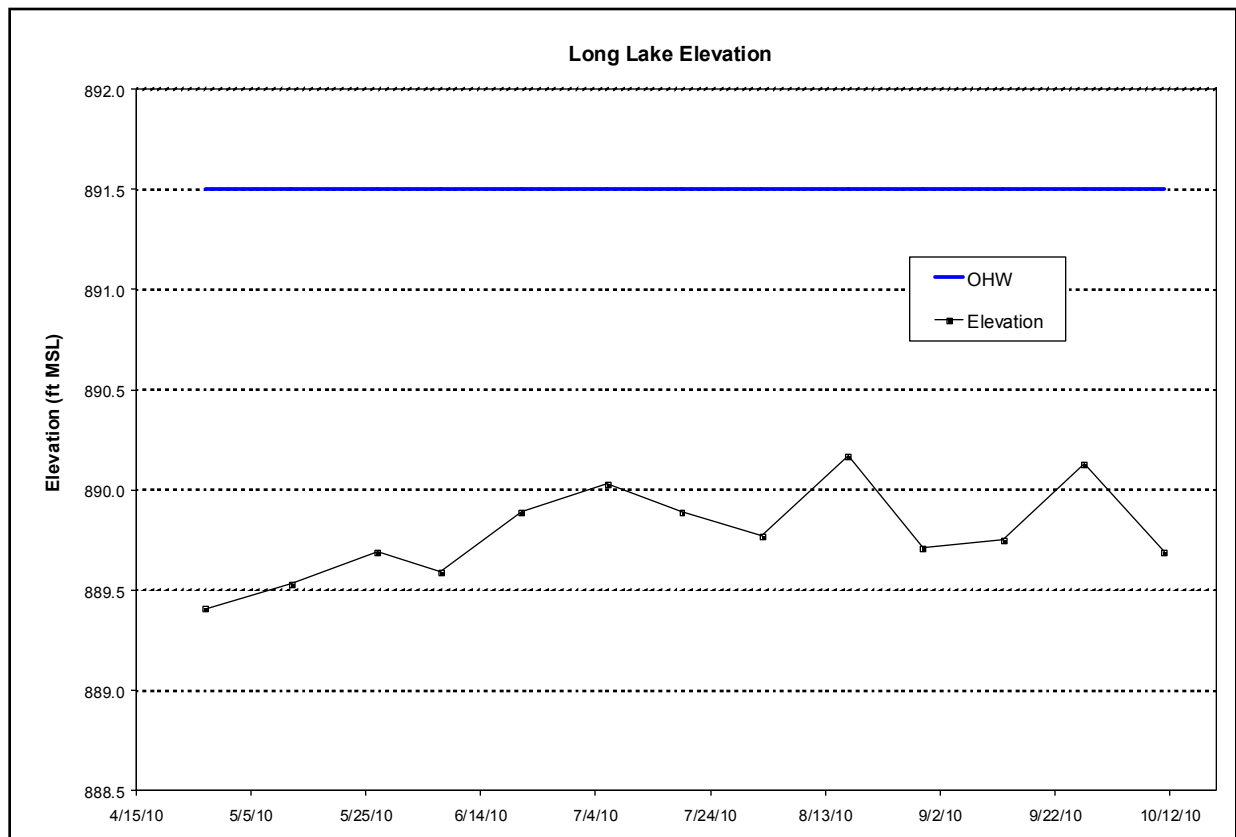
Summary Points

- Long Lake was considered a eutrophic lake in 2010, based on the Carlson Trophic State Index.
- There is a statistically significant **improving trend** for average Secchi transparency and a statistically significant **improving trend** for average total phosphorus.
- The major land use is urban/residential.
- The lake did stratify in 2010, with the thermocline varying between 2 to 4 meters.
- Long Lake is listed as impaired for nutrients on the Minnesota Pollution Control Agency's Impaired Waters List.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/12/2010	0.037	6.5	0.77	2.13	10.37	13.6
4/27/2010	0.037	4.8	0.65	2.90	9.03	16.2
5/12/2010	0.039	11	0.6	2.13	9.86	12.2
5/27/2010	0.038	6.2	0.82	3.96	9.94	23.9
6/7/2010	0.038	7.3	0.93	3.51	10.26	23.0
6/21/2010	0.04	14	0.95	2.13	11.73	24.5
7/6/2010	0.044	28	1.1	1.98	8.81	26.9
7/19/2010	0.05	11	1.1	2.29	5.42	25.7
8/2/2010	0.051	15	1.5	1.83	6.39	26.2
8/17/2010	0.066	17	1.3	1.52	4.63	25.7
8/30/2010	0.062	22	1.2	1.98	6.87	25.6
9/13/2010	0.042	11	0.86	2.74	7.73	19.7
9/27/2010	0.083	10	1.6	1.68	5.77	16.1
10/11/2010	0.061	19	1	1.68	11.07	18.4
2010 Average	0.049	13.1	1.03	2.32	8.42	21.26
2010 Summer Average	0.051	14.2	1.14	2.36	7.76	23.73
Water quality thresholds are 0.04 mg/L TP, 14 ug/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 ug/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	890.17	8/17/2010	889.41	4/27/2010	889.79	

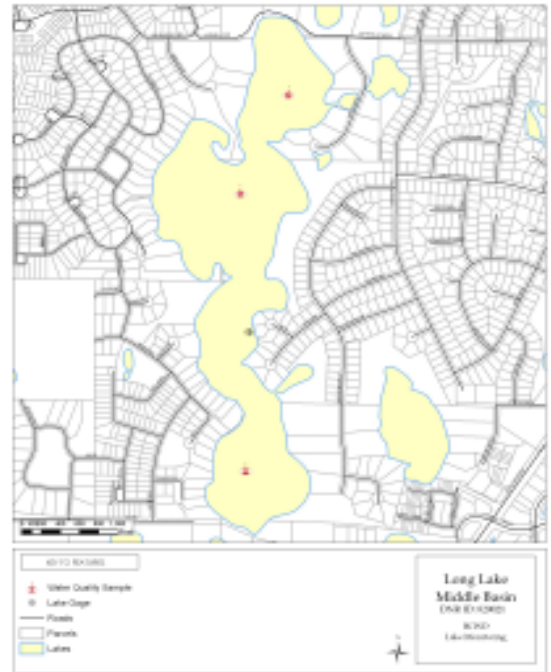
*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."



	Lake Water Quality Summary																
	Trophic Status	Summertime Lake Grades															
	2010	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Total Phosphorus (mg/l)	Eutrophic	C	C	C	C	D	D	D	D	D	D	F	D	D	NA	D	D
Chlorophyll-a (ug/l)	Eutrophic	B	B	B	C	C	D	C	D	F+	F	F	F	F	NA	D	D
Secchi disk (ft)	Mesotrophic	B	C	C	D	D	F	G	F	F	F	F	F	F	F	F+	F+
Overall	Eutrophic	B-	C+	C+	C	D+	D-	G	D-	F	F	F	F	F	F	D-	D-

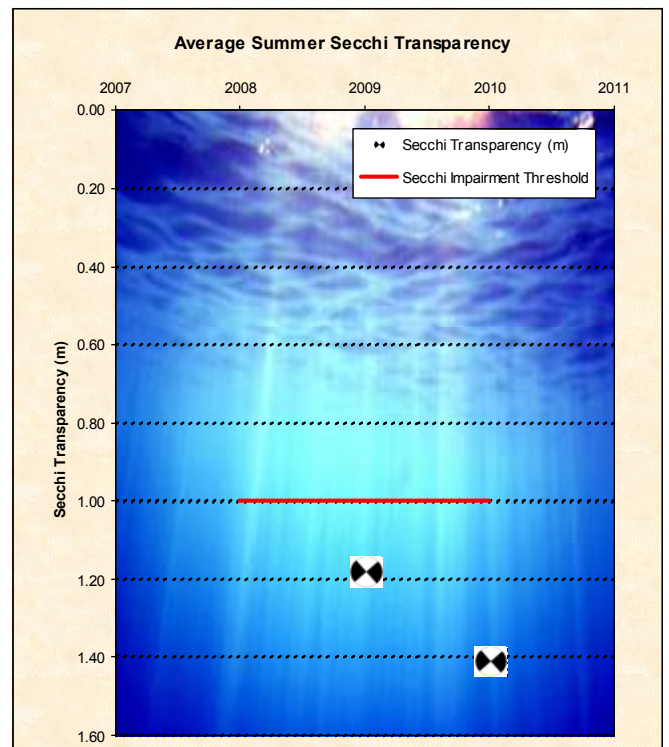
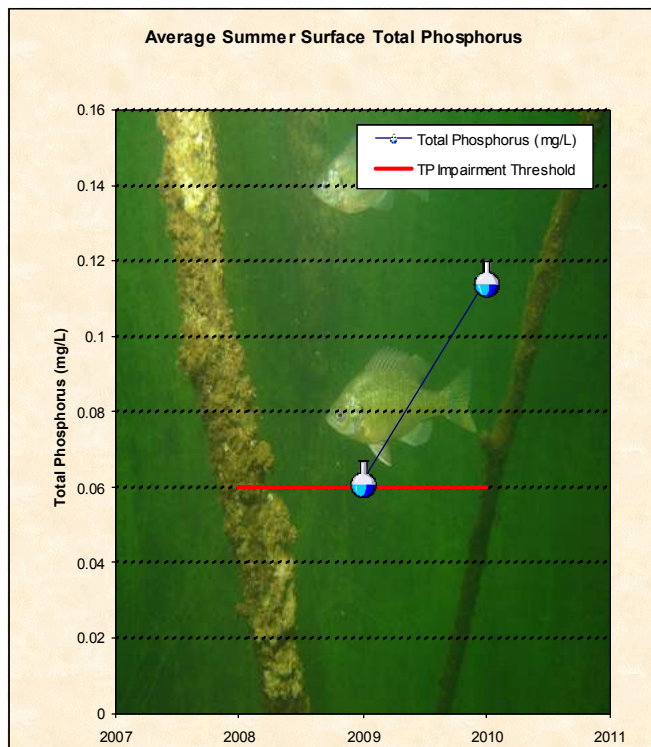
Long Lake – Middle Basin 2010 Lake Grade: C-

- DNR ID #: 820021
 - Municipality: City of Stillwater
 - Location: Section 30, T30N-R20W
 - Lake Size: 110 Acres
 - Maximum Basin Depth (2010): 5 ft
 - Ordinary High Water Mark: 891.50 ft
 - 100-Year High Water Level: 893.20 ft
 - 95% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



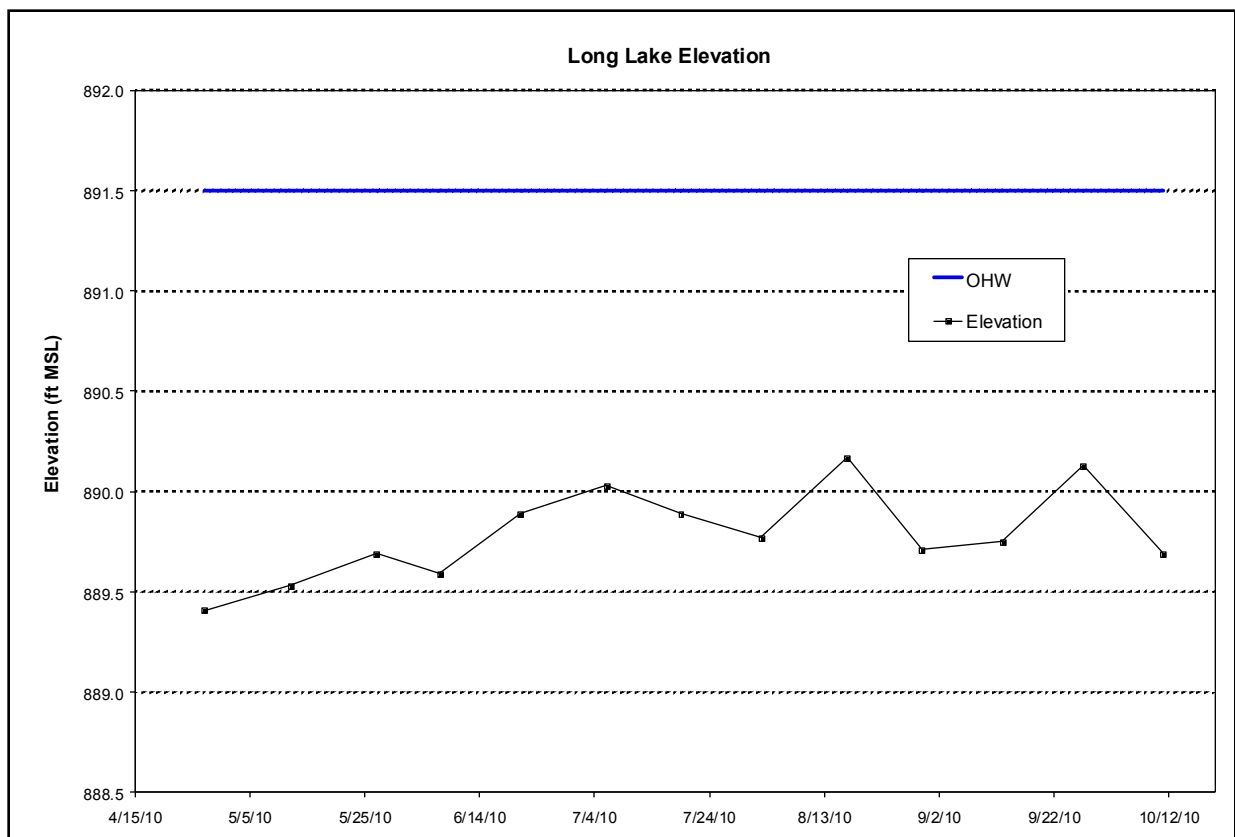
Summary Points

- Long Lake – Middle Basin was considered a eutrophic lake in 2010, based on the Carlson Trophic State Index.
- At this time there are not enough years of data to determine a statistically significant overall water quality trend.
- The major land use is urban/residential.
- This basin is shallow and did not stratify in 2010.
- Long Lake is listed as impaired for nutrients on the Minnesota Pollution Control Agency’s Impaired Waters List.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
6/21/2010	0.062	10	1	1.68	10.7	24.3
7/19/2010	0.171	21	1.3	1.22	3.62	25.4
8/17/2010	0.111	35	1.3	1.22	5.46	26.1
9/13/2010	0.116	29	0.97	1.52	7.34	19.7
2010 Average	0.115	24	1.14	1.41	6.78	23.9
2010 Summer Average	0.115	24	1.14	1.41	6.78	23.9
Water quality thresholds are 0.04 mg/L TP, 14 µg/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 µg/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	890.17	8/17/2010	889.41	4/27/2010	889.79	

*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."

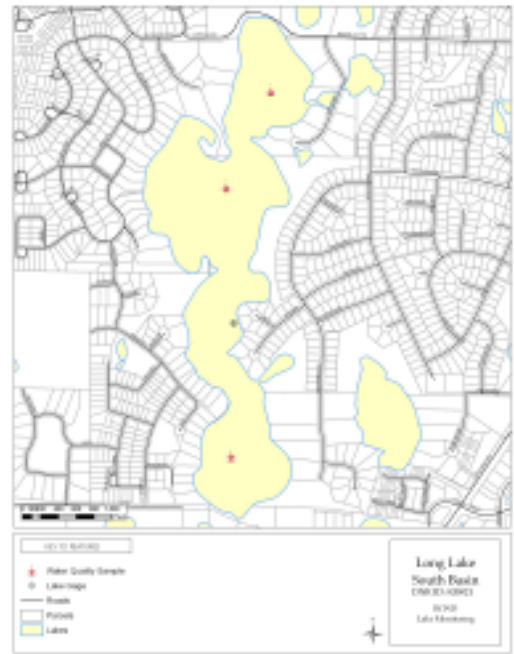


Lake Water Quality Summary												
	Trophic Status		Summertime Lake Grades									
	2010		2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Hypereutrophic		D	C	NA	NA	NA	NA	NA	NA	NA	NA
Chlorophyll-a (ug/l)	Eutrophic		C	A	NA	NA	NA	NA	NA	NA	NA	NA
Secchi disk (ft)	Eutrophic		C	D	NA	NA	NA	NA	NA	NA	NA	NA
Overall	Eutrophic		C-	C	NA	NA	NA	NA	NA	NA	NA	NA

Long Lake – South Basin

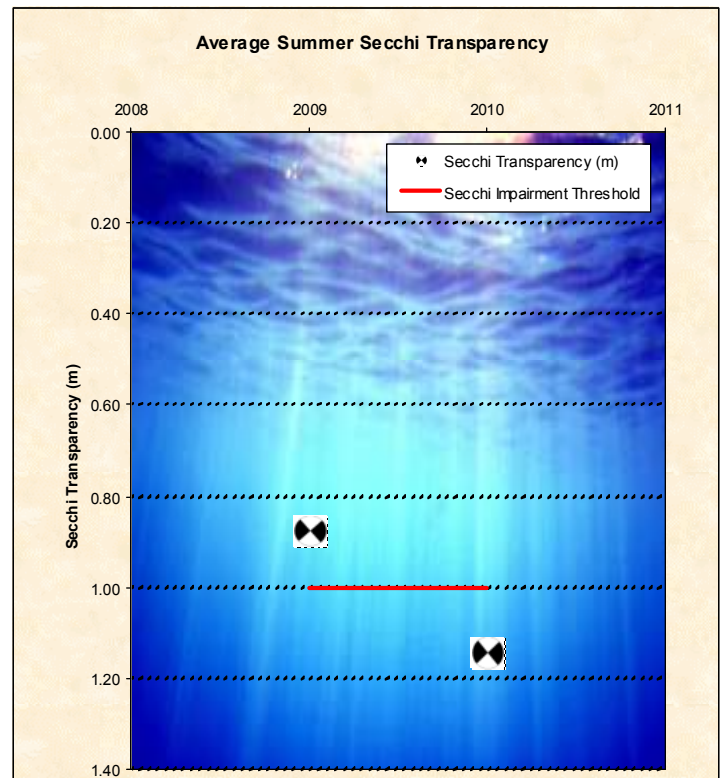
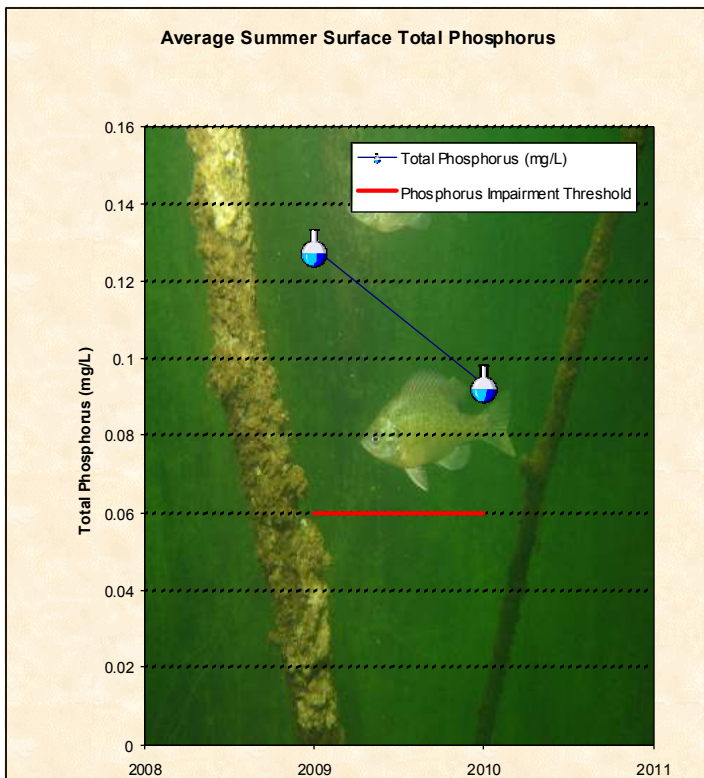
2010 Lake Grade: D+

- DNR ID #: 820021
 - Municipality: City of Stillwater
 - Location: Section 30, T30N-R20W
 - Lake Size: 110 Acres
 - Maximum Basin Depth (2010): 5 ft
 - Ordinary High Water Mark: 891.50 ft
 - 100-Year High Water Level: 893.20 ft
 - 95% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



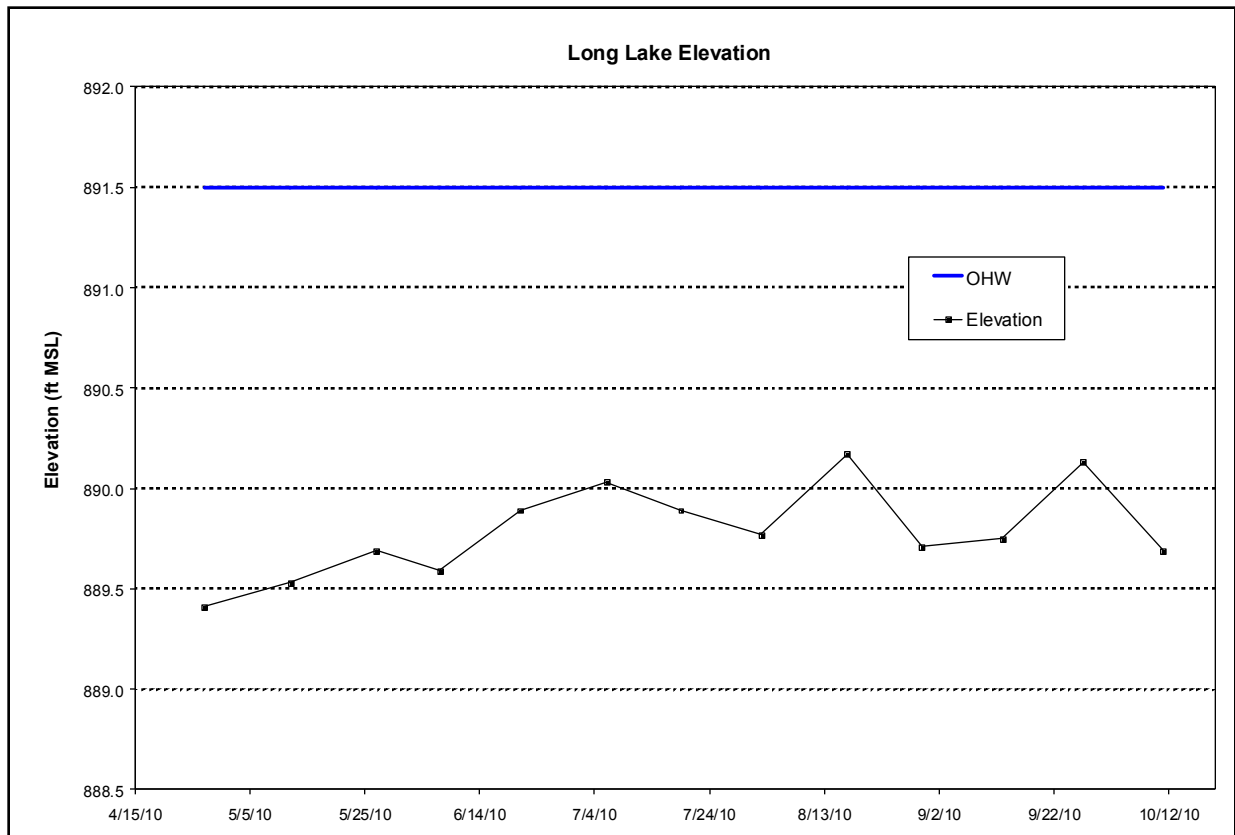
Summary Points

- Long Lake – South Basin was considered a eutrophic lake in 2010, based on the Carlson Trophic State Index.
- At this time there are not enough years of data to determine a statistically significant overall water quality trend.
- The major land use is urban/residential.
- Long Lake is listed as impaired for nutrients on the Minnesota Pollution Control Agency’s Impaired Waters List.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
6/21/2010	0.083	6.9	0.82	1.07	6.54	23.7
7/19/2010	0.106	25	0.9	1.07	1.75	24.1
8/17/2010	0.114	43	1.2	1.22	9.33	26.0
9/13/2010	0.07	16	0.96	1.22	6.92	19.7
2010 Average	0.093	22.7	0.97	1.14	6.14	23.4
2010 Summer Average	0.093	22.7	0.97	1.14	6.14	23.4
Water quality thresholds are 0.04 mg/L TP, 14 µg/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 µg/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	890.17	8/17/2010	889.41	4/27/2010	889.79	

*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."



Lake Water Quality Summary												
	Trophic Status		Summertime Lake Grades									
	2010		2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Hypereutrophic		D	D	NA	NA	NA	NA	NA	NA	NA	NA
Chlorophyll-a (ug/l)	Eutrophic		C	B	NA	NA	NA	NA	NA	NA	NA	NA
Secchi disk (ft)	Eutrophic		D	D	NA	NA	NA	NA	NA	NA	NA	NA
Overall	Eutrophic		D+	C-	NA	NA	NA	NA	NA	NA	NA	NA

Lynch Lake – North Basin

2010 Lake Grade: F

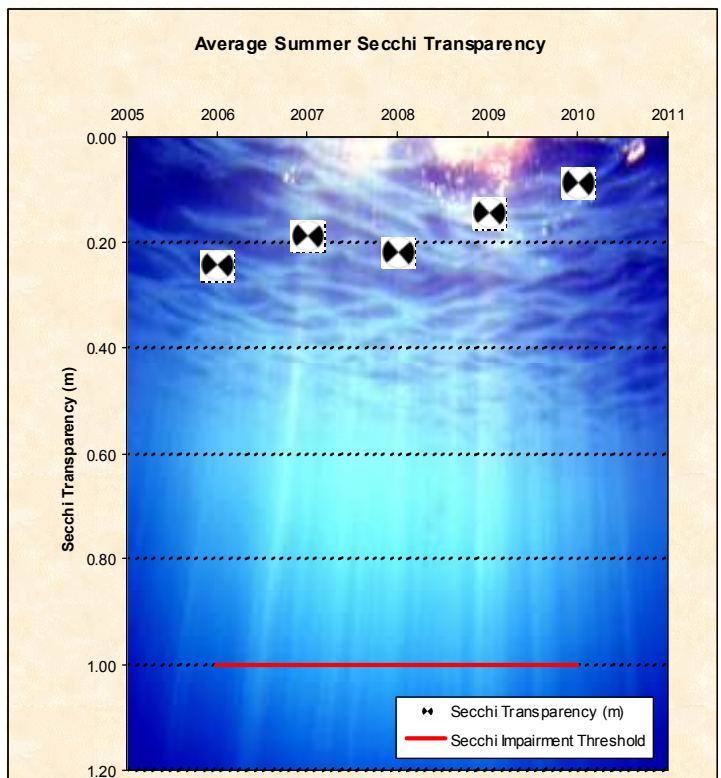
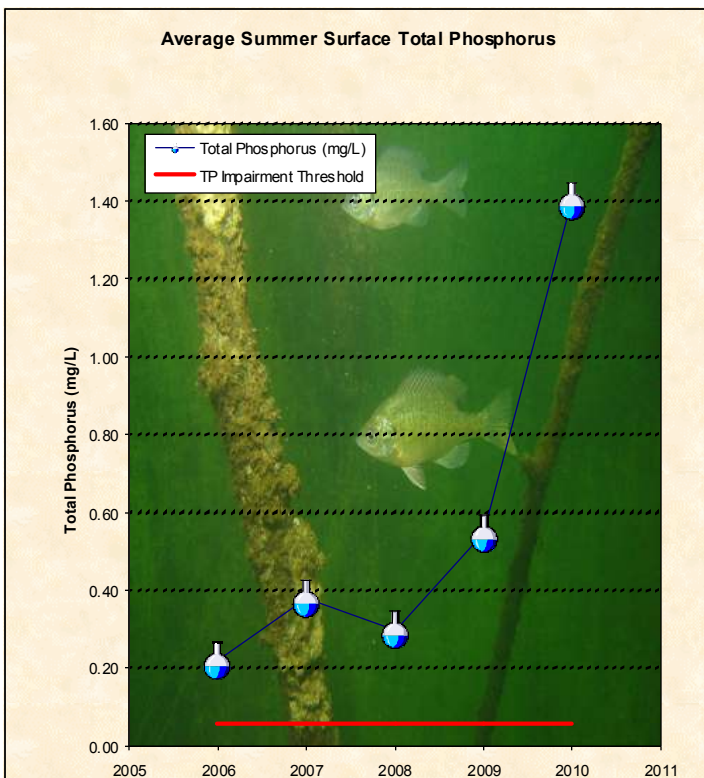
- DNR ID #: 820042
- Municipality: May Township
- Location: Section 30, T31N-R20W
- Lake Size: 87 Acres
- Maximum Depth (2010): 3 ft
- Ordinary High Water Mark: 1005.30 ft
- 100-Year High Water Level: 1008.10 ft
- 100% Littoral

Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.

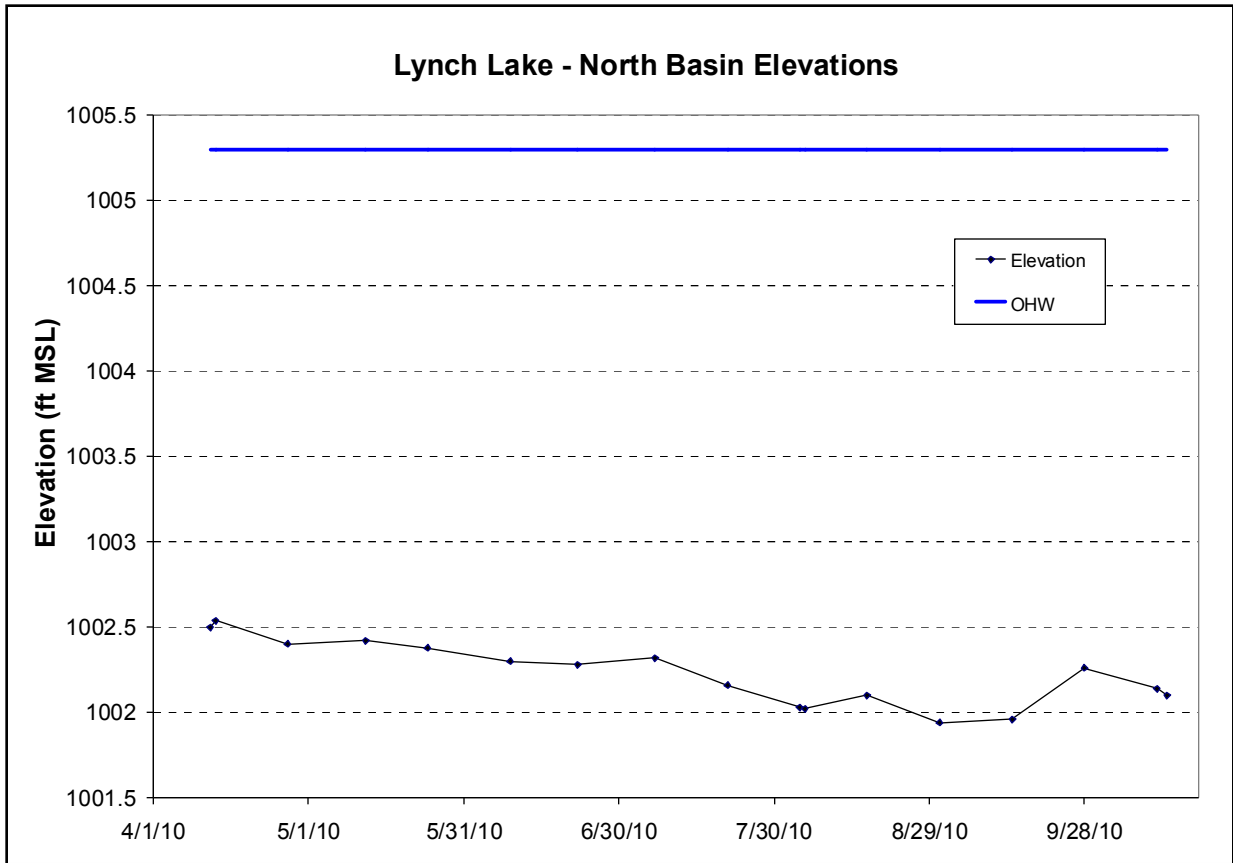


Summary Points

- Lynch North was considered a hypereutrophic lake in 2010, based on the Carlson Trophic State Index.
- At this time there are not enough years of data to determine a statistically significant overall water quality trend.
- The major land use is rural/agricultural.
- The lake did not stratify in 2010.
- The lake was added for impaired nutrients to the 2010 MPCA Draft List of Impaired Waters.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/13/2010	0.195	150	3.2	0.30	12.09	13.1
4/27/2010	0.094	130	2.0	0.15	10.29	12.1
5/12/2010	0.213	110	5.4	0.15	10.64	9.7
5/24/2010	0.175	180	2.3	0.15	11.06	24.9
6/9/2010	0.316	130	20.0	0.15	5.51	19.7
6/22/2010	0.814	460	12.0	0.15	13.75	27.7
7/7/2010	0.806	580	11.0	0.08	10.16	28.7
7/21/2010	1.060	740	14.0	0.08	11.05	26.1
8/4/2010	1.220	460	14.0	0.08	5.06	25.8
8/17/2010	1.440	840	15.0	0.03	3.3	20.7
8/31/2010	1.800	1200	20.0	0.08	5.02	24.4
9/14/2010	3.660	810	40.0	0.08	6.55	18.0
9/28/2010	1.470	660	17.0	0.08	7.89	14.4
10/12/2010	1.460	550	17.0	0.08	7.65	17.4
2010 Average	1.052	500	13.8	0.12	8.57	20.2
2010 Summer Average	1.398	653	18.1	0.09	7.59	22.8
Water quality thresholds are 0.04 mg/L TP, 14 ug/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 ug/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	1002.54	4/13/2010	1001.94	8/31/2010	1002.23	
*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."						



	Lake Water Quality Summary										
	Trophic Status	Summertime Lake Grades									
	2010	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Hypereutrophic	F	F	F	F	F	NA	NA	NA	NA	NA
Chlorophyll-a (ug/l)	Hypereutrophic	F	F	F	F	F	NA	NA	NA	NA	NA
Secchi disk (ft)	Hypereutrophic	F	F	F	F	F	NA	NA	NA	NA	NA
Overall	Hypereutrophic	F	F	F	F	F	NA	NA	NA	NA	NA

Lynch Lake – South Basin

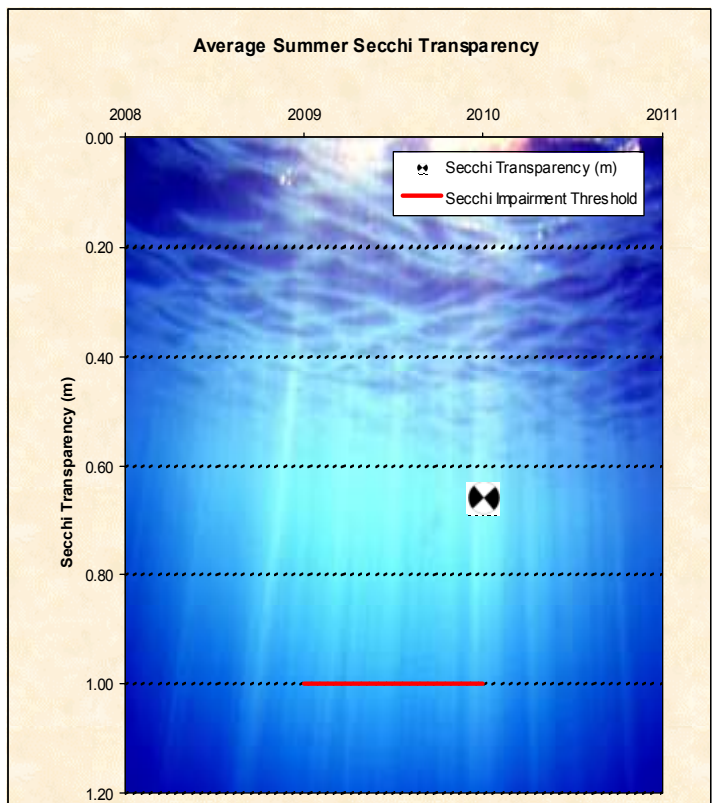
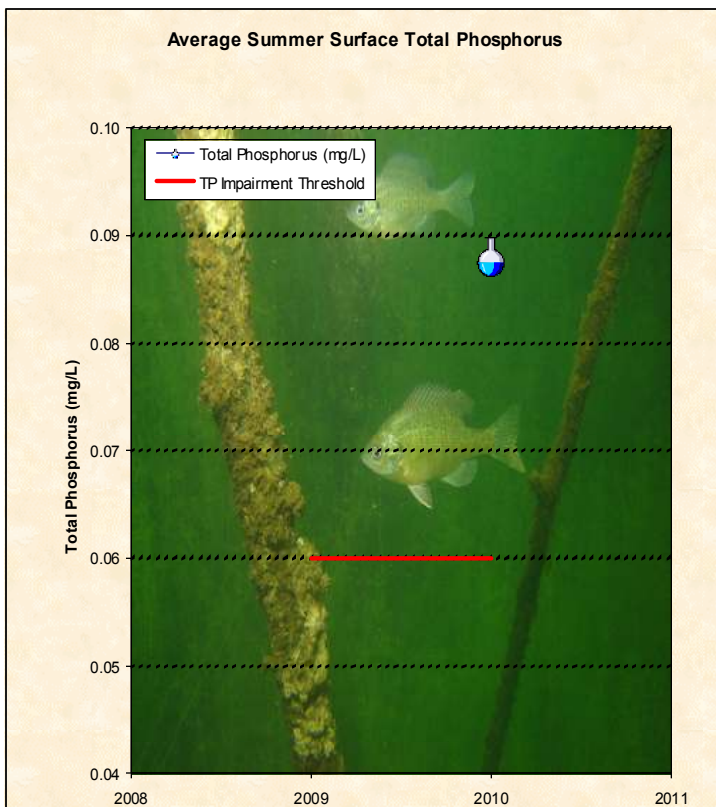
2010 Lake Grade: F

- DNR ID #: 820042
 - Municipality: May Township
 - Location: Section 30, T31N-R20W
 - Lake Size: 87 Acres
 - Maximum Depth (2010): 13 ft
 - Ordinary High Water Mark: 1005.30 ft
 - 100-Year High Water Level: 1008.10 ft
 - 100% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.

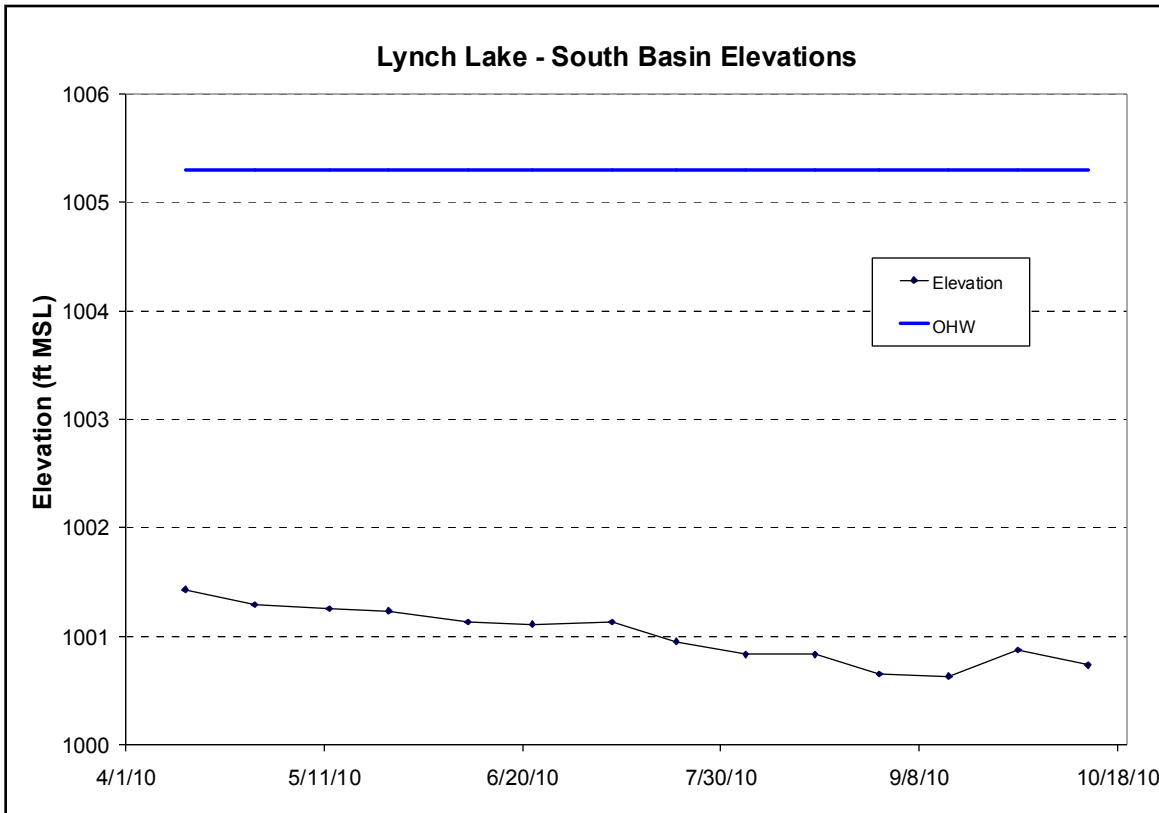


Summary Points

- Lynch South was considered a hypereutrophic lake in 2010, based on the Carlson Trophic State Index.
- At this time there are not enough years of data to determine a statistically significant overall water quality trend.
- The major land use is rural/agricultural.
- The lake stratified in 2010 with the thermocline varying between 2 to 3 meters.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/13/2010	0.107	82	2.5	0.61	11.78	12.9
4/27/2010	0.078	70	2.4	0.46	9.13	14.1
5/12/2010	0.076	80	2.3	0.61	10.14	11.4
5/24/2010	0.088	57	2.5	0.46	10.43	22.3
6/9/2010	0.092	27	2.7	0.76	4.64	20.5
6/22/2010	0.123	65	2.9	0.76	11.48	28.1
7/8/2010	0.076	24	2.2	1.07	7.32	26.4
7/21/2010	0.066	33	2.0	0.91	8.1	26.1
8/4/2010	0.074	96	2.4	0.61	10.56	27.1
8/18/2010	0.102	120	3.0	0.61	9.51	23.2
8/31/2010	0.093	120	2.8	0.46	7.01	24.7
9/14/2010	0.081	170	2.4	0.46	13.15	20.4
9/28/2010	0.085	340	2.8	0.30	14.83	17.0
10/12/2010	0.101	240	3.1	0.30	12.45	17.8
2010 Average	0.089	109	2.6	0.60	10.04	20.9
2010 Summer Average	0.088	111	2.6	0.66	9.62	23.7
Water quality thresholds are 0.04 mg/L TP, 14 µg/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 µg/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	1001.43	4/13/2010	1000.63	9/14/2010	1001.00	
*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."						



Lake Water Quality Summary											
	Trophic Status		Summertime Lake Grades								
	2010	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Hypereutrophic	D	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorophyll-a (ug/l)	Hypereutrophic	F	NA	NA	NA	NA	NA	NA	NA	NA	NA
Secchi disk (ft)	Hypereutrophic	F	NA	NA	NA	NA	NA	NA	NA	NA	NA
Overall	Hypereutrophic	F	NA	NA	NA	NA	NA	NA	NA	NA	NA

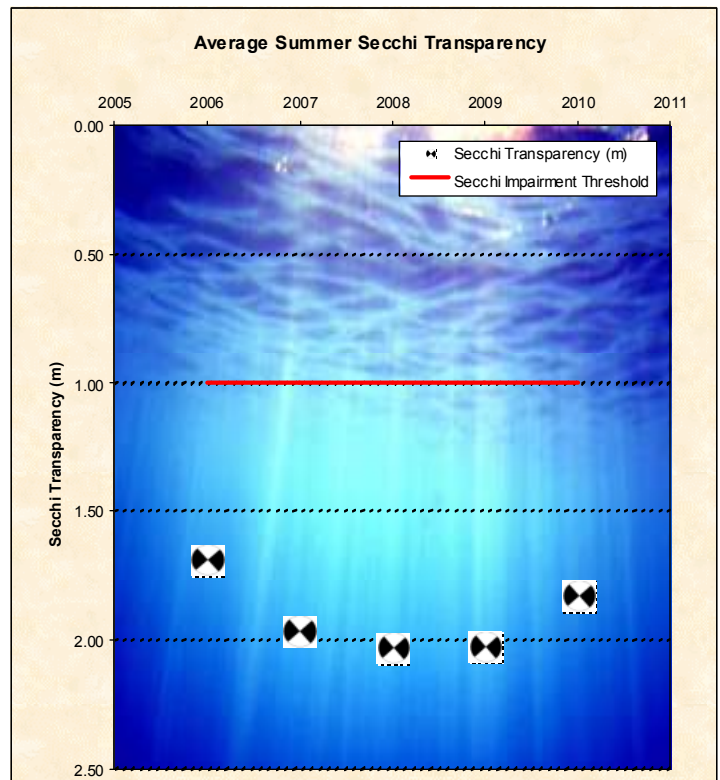
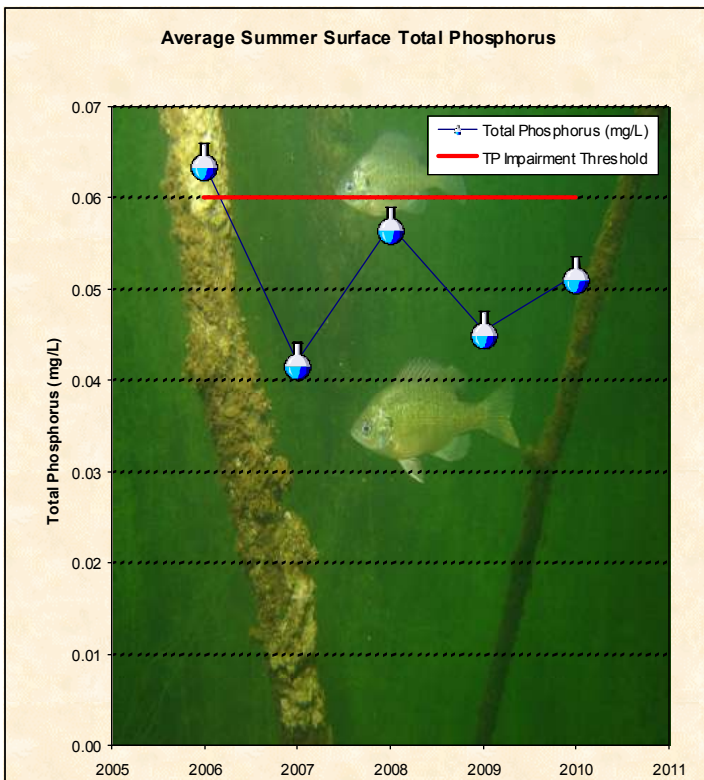
Masterman Lake 2010 Lake Grade: C

- DNR ID #: 820126
 - Municipality: City of Grant
 - Location: Section 23, T30N-R21W
 - Lake Size: 40 Acres
 - Maximum Depth (2010): 7 ft
 - Ordinary High Water Mark: 955.70 ft
 - 100-Year High Water Level: 955.90 ft
 - 100% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.

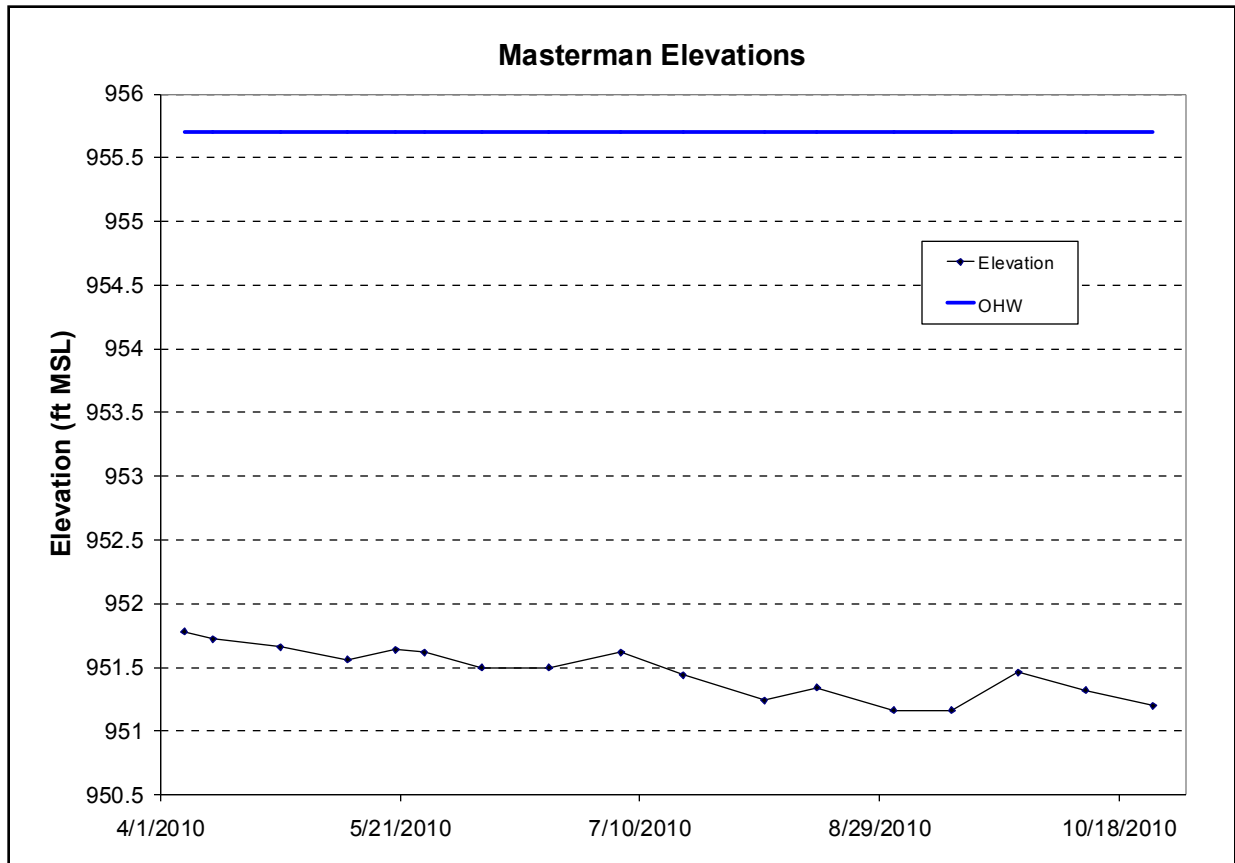


Summary Points

- Masterman Lake was considered a eutrophic lake in 2010, based on the Carlson Trophic State Index.
- At this time no statistically significant trend can be determined for overall water quality.
- The major land use is rural/agricultural.
- The lake did not stratify in 2010.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/12/2010	0.034	7.6	0.95	2.13	10.86	13.9
4/26/2010	0.033	10	0.85	2.13	8.18	14.2
5/10/2010	0.047	8.5	0.89	1.83	9.93	13.0
5/26/2010	0.035	10	1.00	2.13	8.06	26.1
6/7/2010	0.055	17	1.10	2.13	7.78	22.8
6/21/2010	0.050	20	1.10	1.98	7.87	24.3
7/6/2010	0.055	26	1.20	1.98	6.67	27.3
7/19/2010	0.063	26	1.20	1.52	5.92	26.4
8/2/2010	0.042	18	1.10	1.68	5.29	26.5
8/16/2010	0.074	56	1.60	1.52	6.95	23.5
9/1/2010	0.066	26	1.50	1.37	6.62	26.3
9/13/2010	0.042	15	1.20	1.98	7.93	19.4
9/27/2010	0.034	3	1.10	1.98	6.27	15.1
10/11/2010	0.055	7	1.20	1.98	7.78	17.9
2010 Average	0.049	18	1.14	1.88	7.58	21.2
2010 Summer Average	0.052	22	1.21	1.83	6.94	23.8
Water quality thresholds are 0.04 mg/L TP, 14 ug/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 ug/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	951.78	4/6/2010	951.16	9/1/2010 9/13/2010	951.47	
*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."						



	Lake Water Quality Summary										
	Trophic Status	Summertime Lake Grades									
	2010	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Eutrophic	C	C	C	C	D	NA	NA	NA	NA	NA
Chlorophyll-a (ug/l)	Eutrophic	C	B	C	B	C	NA	NA	NA	NA	NA
Secchi disk (ft)	Mesotrophic	C	C	C	C	C	NA	NA	NA	NA	NA
Overall	Eutrophic	C	C+	C	C+	C-	NA	NA	NA	NA	NA

Pat Lake

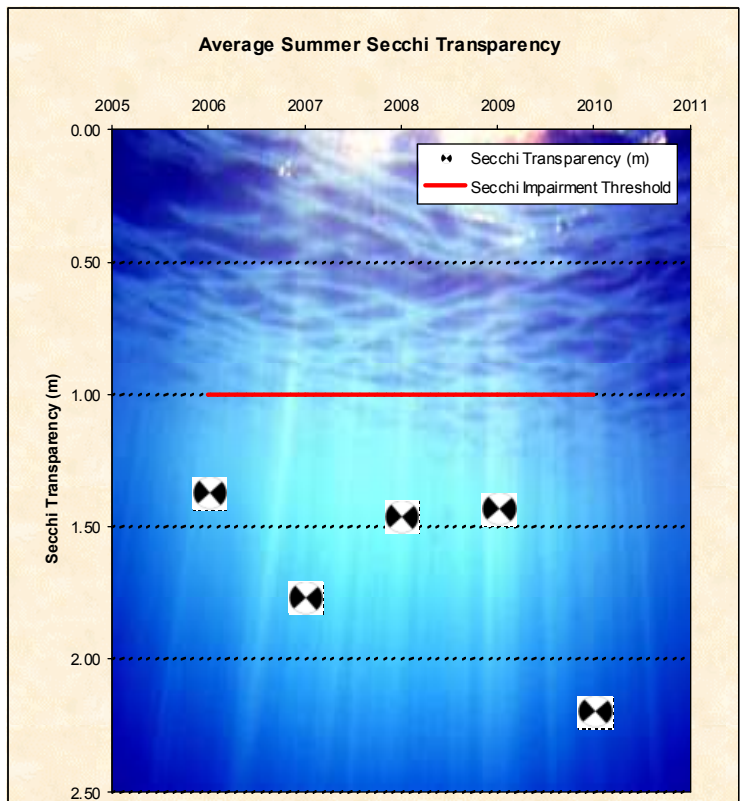
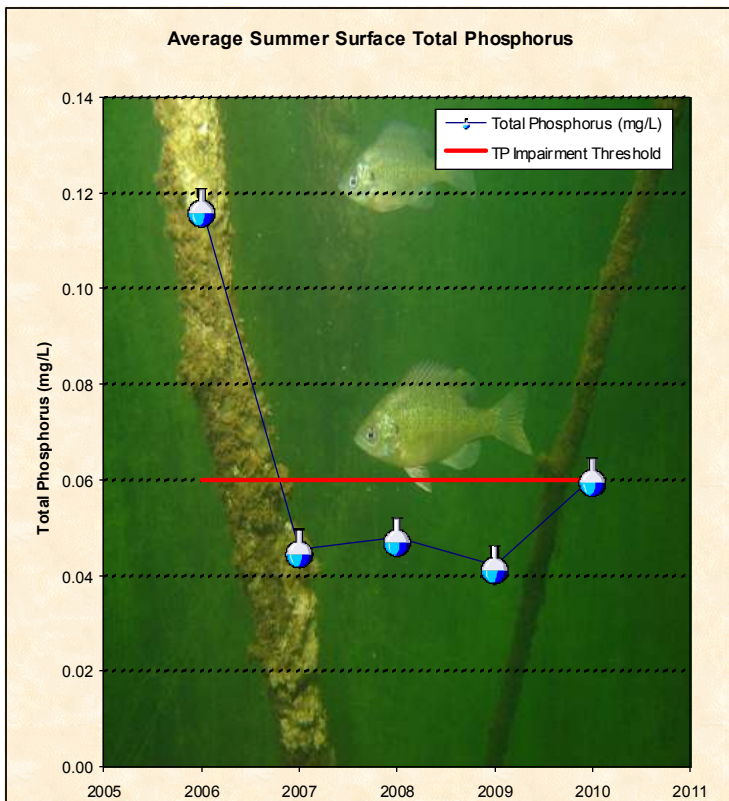
2010 Lake Grade: C

- DNR ID #: 820125
 - Municipality: City of Grant
 - Location: Section 11, T30N-R21W
 - Lake Size: 20 Acres
 - Maximum Depth (2010): 14 ft
 - Ordinary High Water Mark: 941.80 ft
 - 100-Year High Water Level: 949.10 ft
 - % Littoral: NA
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



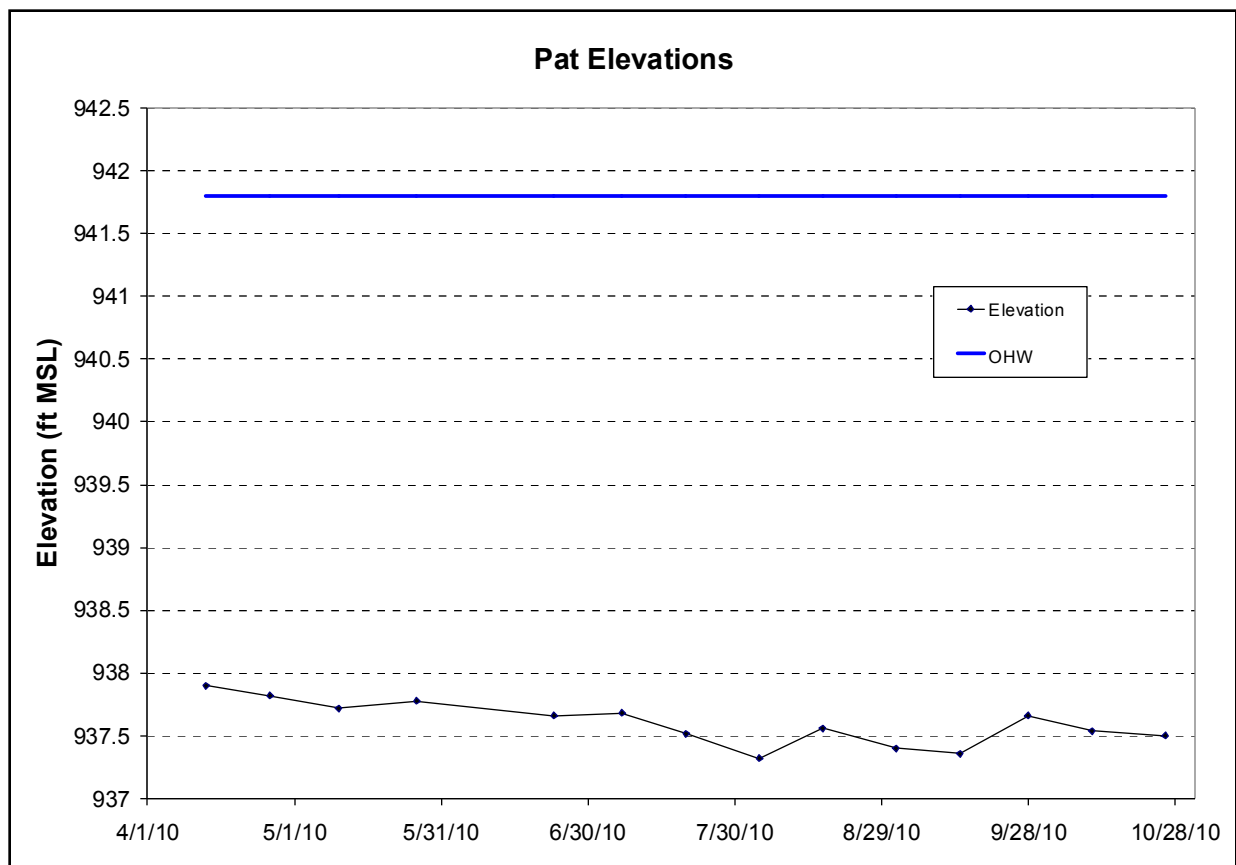
Summary Points

- Pat Lake was considered a eutrophic lake in 2010, based on the Carlson Trophic State Index.
- At this time there are not enough years of data to determine a statistically significant overall water quality trend.
- The major land use is rural/agricultural.
- The lake stratified in 2010, with a thermocline of 2 meters.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/12/2010	0.025	4.2	0.73	1.37	11.81	15.8
4/26/2010	0.028	9.6	0.76	0.91	8.36	14.6
5/10/2010	0.030	8.4	0.64	1.37	11.22	13.6
5/26/2010	0.049	4.6	1.00	2.59	8.6	25.7
6/7/2010	0.073	12	1.20	2.29	9.3	24.9
6/22/2010	0.057	28	1.20	1.83	11.55	24.0
7/7/2010	0.062	40	1.50	1.22	9.48	27.9
7/20/2010	0.091	47	1.50	1.52	7.75	25.4
8/4/2010	0.114	45	2.40	1.22	4.93	27.0
8/17/2010	0.052	8.6	1.10	2.29	7.54	24.6
9/1/2010	0.049	11	1.20	1.83	6.84	26.0
9/14/2010	0.026	4.7	0.94	3.35	8.51	18.9
9/28/2010	0.033	4	1.40	3.81	9.65	15.9
10/11/2010	0.025	3.3	0.92	2.90	10.09	18.3
2010 Average	0.051	16	1.18	2.04	8.97	21.6
2010 Summer Average	0.061	20	1.34	2.19	8.42	24.03
Water quality thresholds are 0.04 mg/L TP, 14 ug/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 ug/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	937.90	4/13/2010	937.32	8/4/2010	937.60	

*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."



	Trophic Status		Summertime Lake Grades									
	2010		2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Hypereutrophic		C	C	C	C	D	NA	NA	NA	NA	NA
Chlorophyll-a (ug/l)	Eutrophic		C	B	C	B	C	NA	NA	NA	NA	NA
Secchi disk (ft)	Mesotrophic		C	C	C	C	C	NA	NA	NA	NA	NA
Overall	Eutrophic		C	C+	C	C+	C-	NA	NA	NA	NA	NA

Plaisted Lake

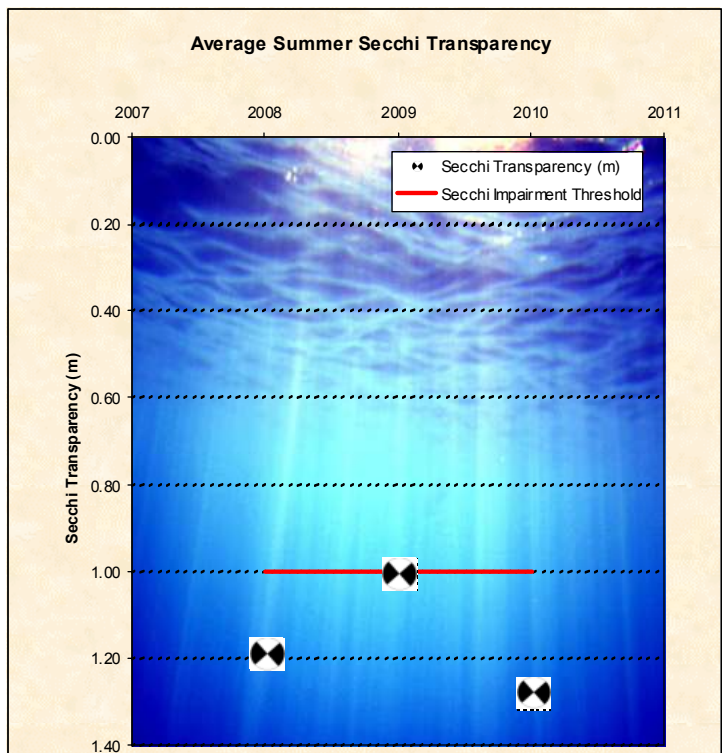
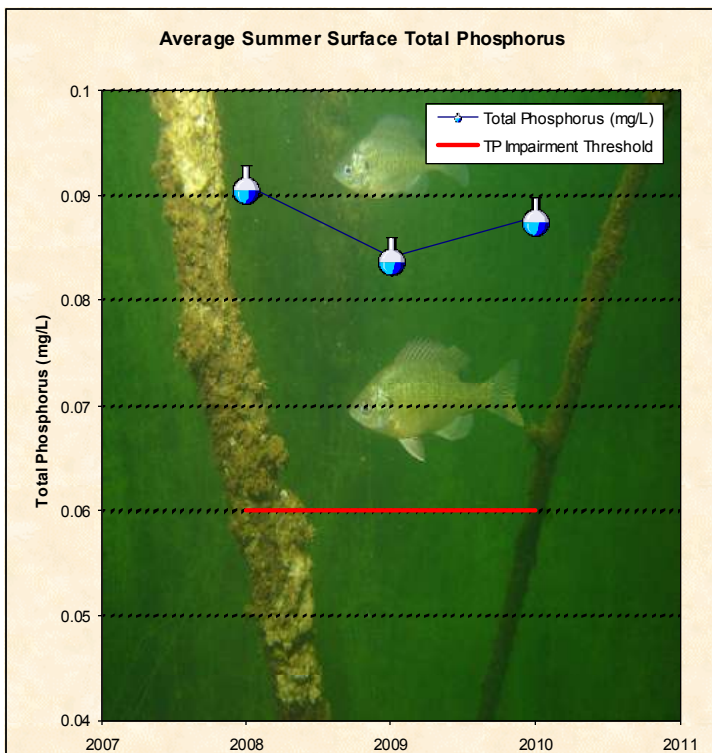
2010 Lake Grade: C-

- DNR ID #: 820148
 - Municipality: City of Hugo
 - Location: Section 25, T31N-R21W
 - Lake Size: 70 Acres
 - Maximum Depth (2010): 9 ft
 - Ordinary High Water Mark: 966.00 ft
 - 100-Year High Water Level: NA
 - 100% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



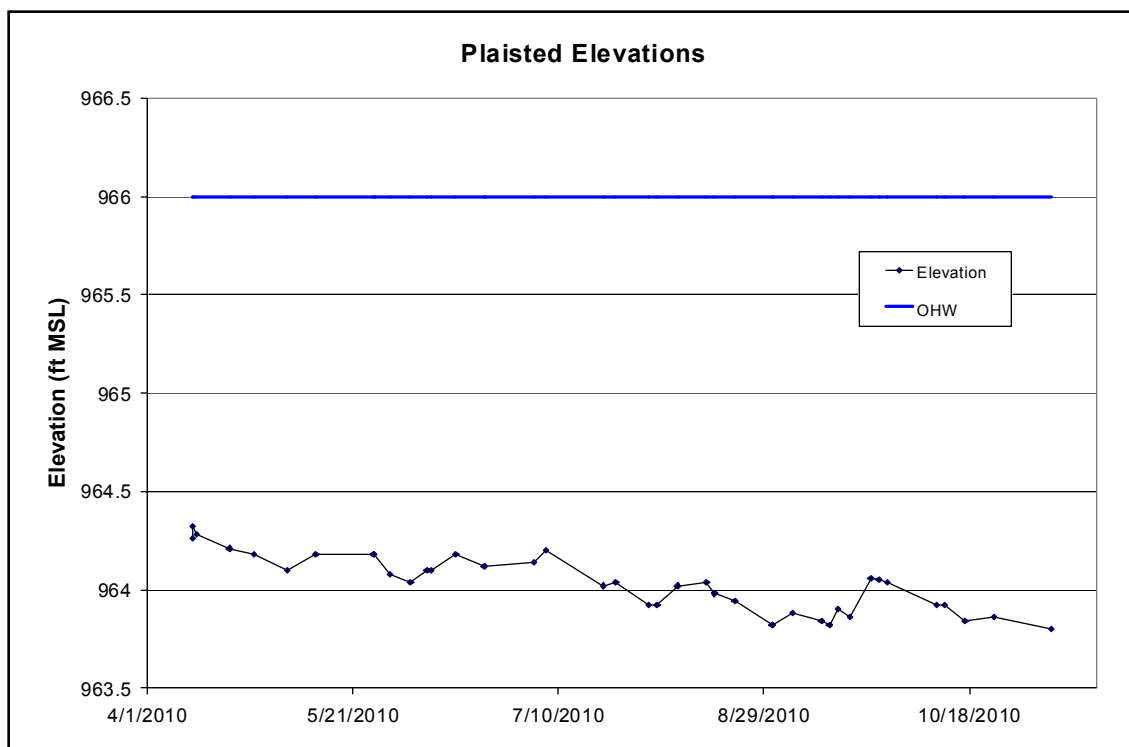
Summary Points

- Plaisted Lake was considered a hypereutrophic lake in 2010, based on the Carlson Trophic State Index.
- At this time there are not enough years of data to determine a statistically significant overall water quality trend.
- The major land use is rural/agricultural.
- The lake did not stratify in 2010.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/13/2010	0.037	9.6	1.4	2.59	12.38	13.3
4/27/2010	0.034	4.5	1.4	2.74	10.5	14.5
5/12/2010	0.039	4.1	1.2	2.59	10.82	11.3
5/26/2010	0.044	3.9	1.3	2.59	9.39	24.8
6/9/2010	0.115	19	1.9	1.68	6.11	21.2
6/22/2010	0.093	14	1.7	1.68	9.31	27.8
7/7/2010	0.132	34	1.8	1.07	10.08	28.4
7/21/2010	0.123	58	1.8	0.91	9.01	26.1
8/3/2010	0.099	56	2.2	0.76	9.46	27.1
8/17/2010	0.071	41	2.2	1.07	7.04	23.6
8/31/2010	0.064	140	2.1	0.91	7.19	25.6
9/14/2010	0.065	32	1.9	0.91	8.98	18.9
9/28/2010	0.073	27	1.9	1.22	9.32	15.5
10/12/2010	0.054	23	1.8	1.07	12.4	17.8
2010 Average	0.075	33.3	1.8	1.56	9.43	21.1
2010 Summer Average	0.088	42.5	1.9	1.28	8.59	23.9
Water quality thresholds are 0.04 mg/L TP, 14 ug/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 ug/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	964.32	4/12/2010	963.80	11/7/2010	964.03	

*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."



Lake Water Quality Summary											
	Trophic Status	Summertime Lake Grades									
	2010	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Hypereutrophic	D	D	D	NA	NA	NA	NA	NA	NA	NA
Chlorophyll-a (ug/l)	Hypereutrophic	C	C	D	NA	NA	NA	NA	NA	NA	NA
Secchi disk (ft)	Eutrophic	C	D	C	NA	NA	NA	NA	NA	NA	NA
Overall	Hypereutrophic	C-	D+	D+	NA	NA	NA	NA	NA	NA	NA

South School Section Lake

2010 Lake Grade: C-

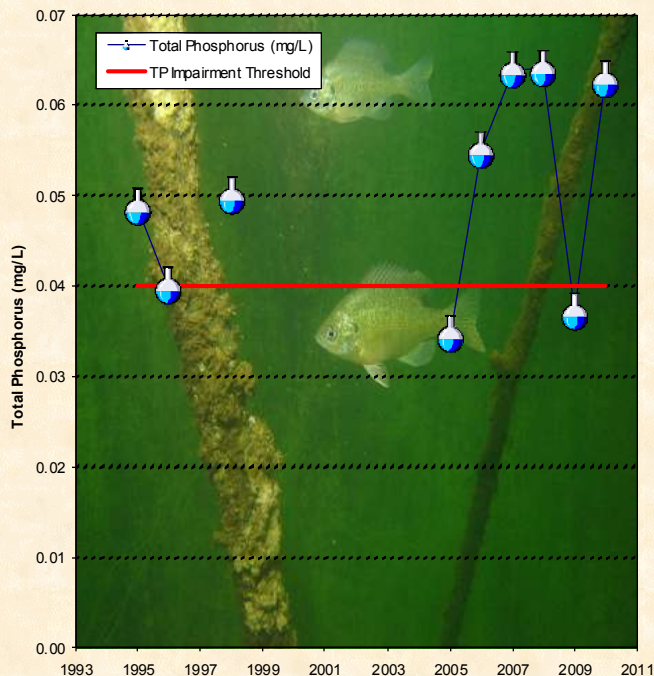
- DNR ID #: 820151
 - Municipality: City of Hugo
 - Location: S ½ Section 25, T31N-R21W
 - Lake Size: 115 Acres
 - Maximum Depth (2010): 15 ft
 - Ordinary High Water Mark: 965.30 ft
 - 100-Year High Water Level: 972.20 ft
 - 41% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



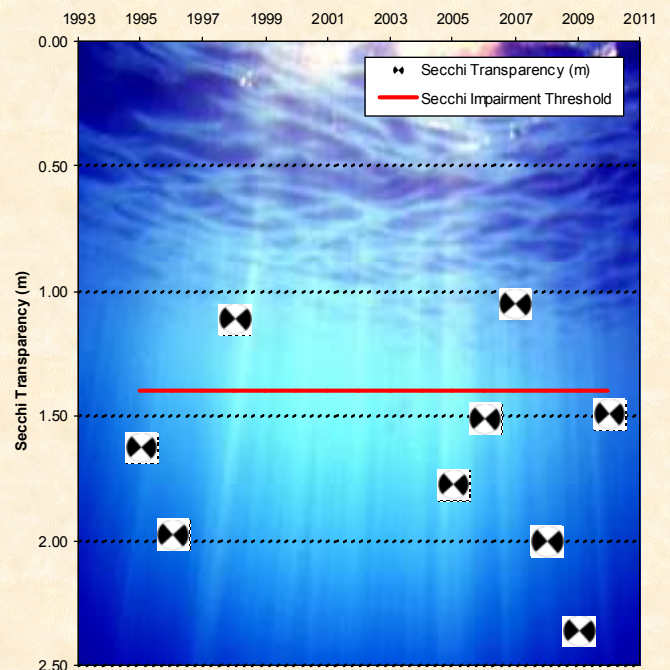
Summary Points

- South School Section Lake was considered a hypereutrophic lake in 2010, based on the Carlson Trophic State Index.
- At this time no statistically significant trend can be determined for overall water quality.
- The major land use is rural/agricultural.
- The lake did not stratify in 2010.
- South School Section Lake is listed as impaired for nutrients on the Minnesota Pollution Control Agency's Impaired Waters List.

Average Summer Surface Total Phosphorus

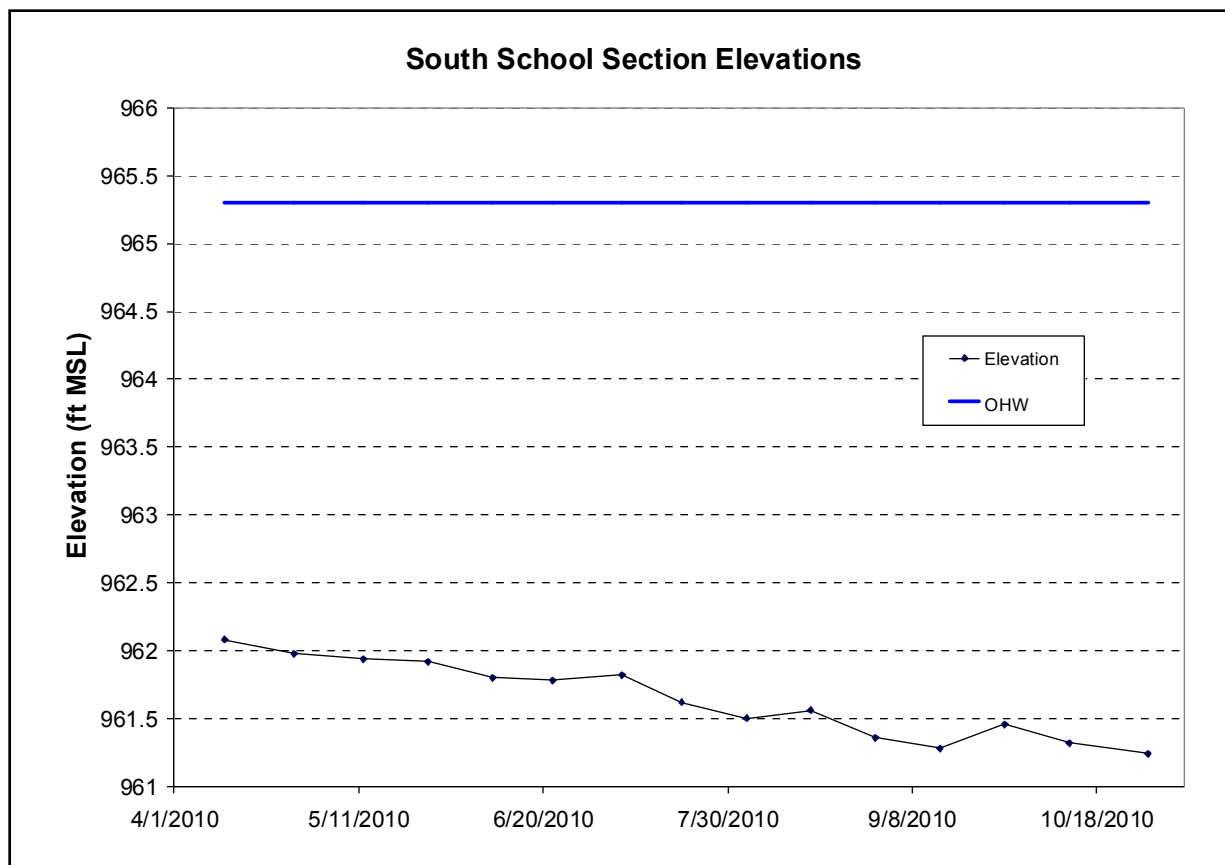


Average Summer Secchi Transparency



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/12/2010	0.031	3.5	1.10	4.27	11.61	12.4
4/27/2010	0.027	4.5	0.96	3.51	9.4	14.5
5/12/2010	0.021	4.1	0.55	3.66	9.75	11.8
5/26/2010	0.036	6.4	0.87	3.81	9.56	22.8
6/9/2010	0.038	18	0.97	2.29	8.05	21.2
6/22/2010	0.040	24	1.00	2.29	10.42	23.8
7/7/2010	0.044	38	1.30	1.52	9.55	26.7
7/20/2010	0.067	28	1.30	1.52	8.22	26.7
8/3/2010	0.107	83	1.80	0.76	10.55	27.0
8/17/2010	0.090	89	2.00	0.61	6.64	23.8
8/31/2010	0.089	100	2.20	0.46	8.7	25.1
9/14/2010	0.056	66	1.80	0.61	8.96	18.5
9/28/2010	0.061	47	1.60	1.07	8.47	15.5
10/12/2010	0.064	49	1.60	0.76	10.57	17.3
2010 Average	0.055	40.0	1.36	1.94	9.32	20.5
2010 Summer Average	0.063	49.9	1.48	1.49	8.91	23.1
Water quality thresholds are 0.04 mg/L TP, 14 ug/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 ug/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	962.08	4/12/2010	961.24	10/29/2010	961.64	

*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the



Lake Water Quality Summary												
	Trophic Status		Summertime Lake Grades									
	2010		2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Hypereutrophic		C	C	C	C	C	C	NA	NA	NA	NA
Chlorophyll-a (ug/l)	Hypereutrophic		D	B	C	D	C	C+	NA	NA	NA	NA
Secchi disk (ft)	Eutrophic		C	B	C	D	C	C	NA	NA	NA	NA
Overall	Hypereutrophic		C-	B-	C	D+	C	C	NA	NA	NA	NA

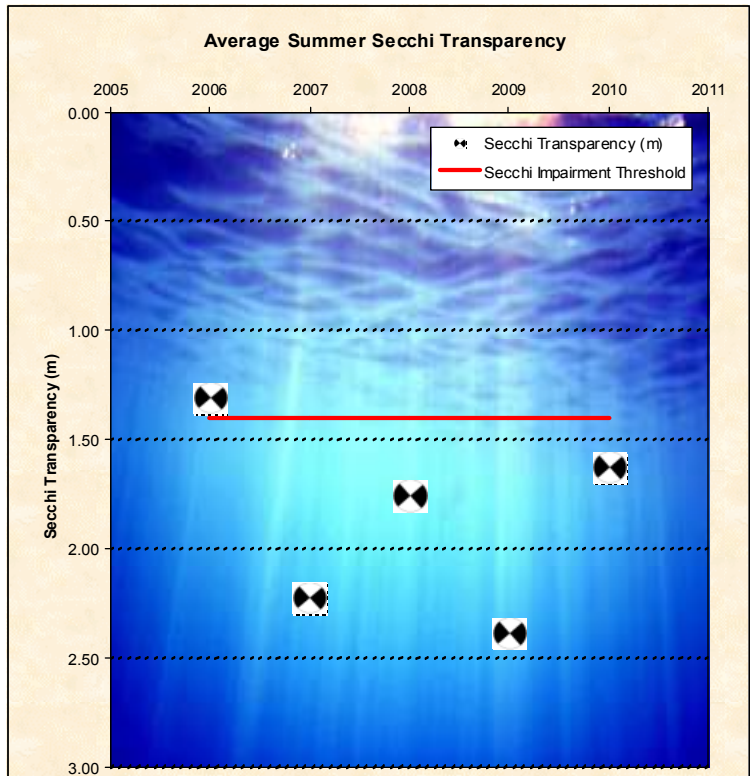
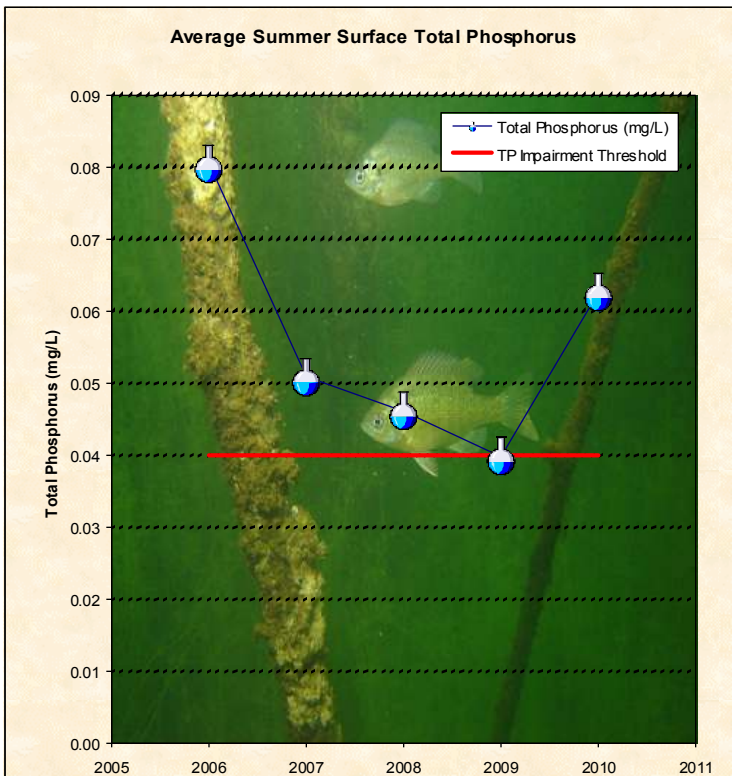
Woodpile Lake 2010 Lake Grade: C

- DNR ID #: 820132
- Municipality: City of Grant
- Location: Section 23, T30N-R21W
- Lake Size: 15 Acres
- Maximum Depth (2010): 23 ft
- Ordinary High Water Mark: 968.50 ft
- 100-Year High Water Level: 971.00 ft
- 8% Littoral
Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



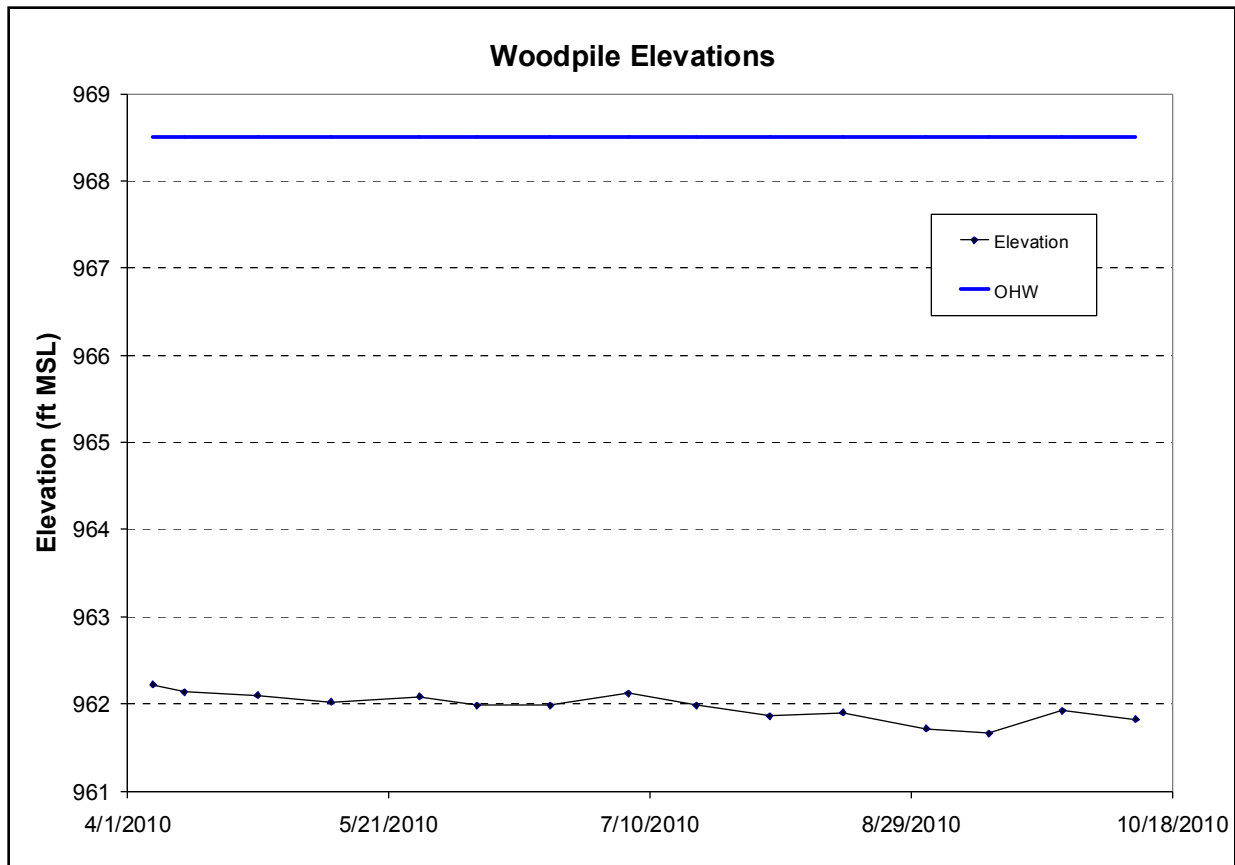
Summary Points

- Woodpile Lake was considered a eutrophic lake in 2010, based on the Carlson Trophic State Index.
- At this time there are not enough years of data to determine a statistically significant overall water quality trend.
- The major land use is rural/agricultural.
- The lake did stratify in 2010 with the thermocline varying between 2 to 3 meters.



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depths (m)	Surface Dissolved Oxygen Levels (mg/L)	Surface Temperature Levels (Celsius)
4/12/2010	0.027	4.2	0.78	3.20	11.79	13.1
4/26/2010	0.024	4.1	0.76	4.88	8.99	14.4
5/10/2010	0.046	2.3	0.90	6.10	10.63	13.2
5/26/2010	0.025	7.5	0.86	4.57	9.79	25.4
6/7/2010	0.041	13	1.10	2.74	9.92	22.9
6/21/2010	0.041	14	1.10	1.98	10.28	24.2
7/6/2010	0.055	42	1.40	0.91	9.76	27.0
7/19/2010	0.071	23	1.40	1.07	6.57	26.2
8/2/2010	0.053	21	1.30	1.68	5.79	26.3
8/16/2010	0.062	27	1.40	0.76	6.64	24.7
9/1/2010	0.079	64	2.10	0.61	8.87	25.4
9/13/2010	0.082	32	2.00	0.91	7.62	19.1
9/27/2010	0.117	57	2.80	1.07	9.68	15.6
10/11/2010	0.176	25	2.00	2.59	10.39	16.9
2010 Average	0.064	24	1.42	2.36	9.05	21.0
2010 Summer Average	0.063	30	1.55	1.63	8.49	23.7
Water quality thresholds are 0.04 mg/L TP, 14 ug/L CL-a, 1.4 m Secchi depth*						
Shallow lake water quality thresholds are 0.06 mg/L TP, 20 ug/L CL-a, 1.0 m Secchi depth*						
	High	High Date	Low	Low Date	Average	
2010 Elevation (ft)	962.22	4/6/2010	961.66	9/13/2010	961.97	

*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) for paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."



	Trophic Status		Summertime Lake Grades									
	2010		2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Total Phosphorus (mg/l)	Hypereutrophic		C	C	C	C	D	NA	NA	NA	NA	NA
Chlorophyll-a (ug/l)	Eutrophic		C	B	C	B	B	NA	NA	NA	NA	NA
Secchi disk (ft)	Eutrophic		C	B	C	B	C	NA	NA	NA	NA	NA
Overall	Eutrophic		C	B-	C	B-	C	NA	NA	NA	NA	NA