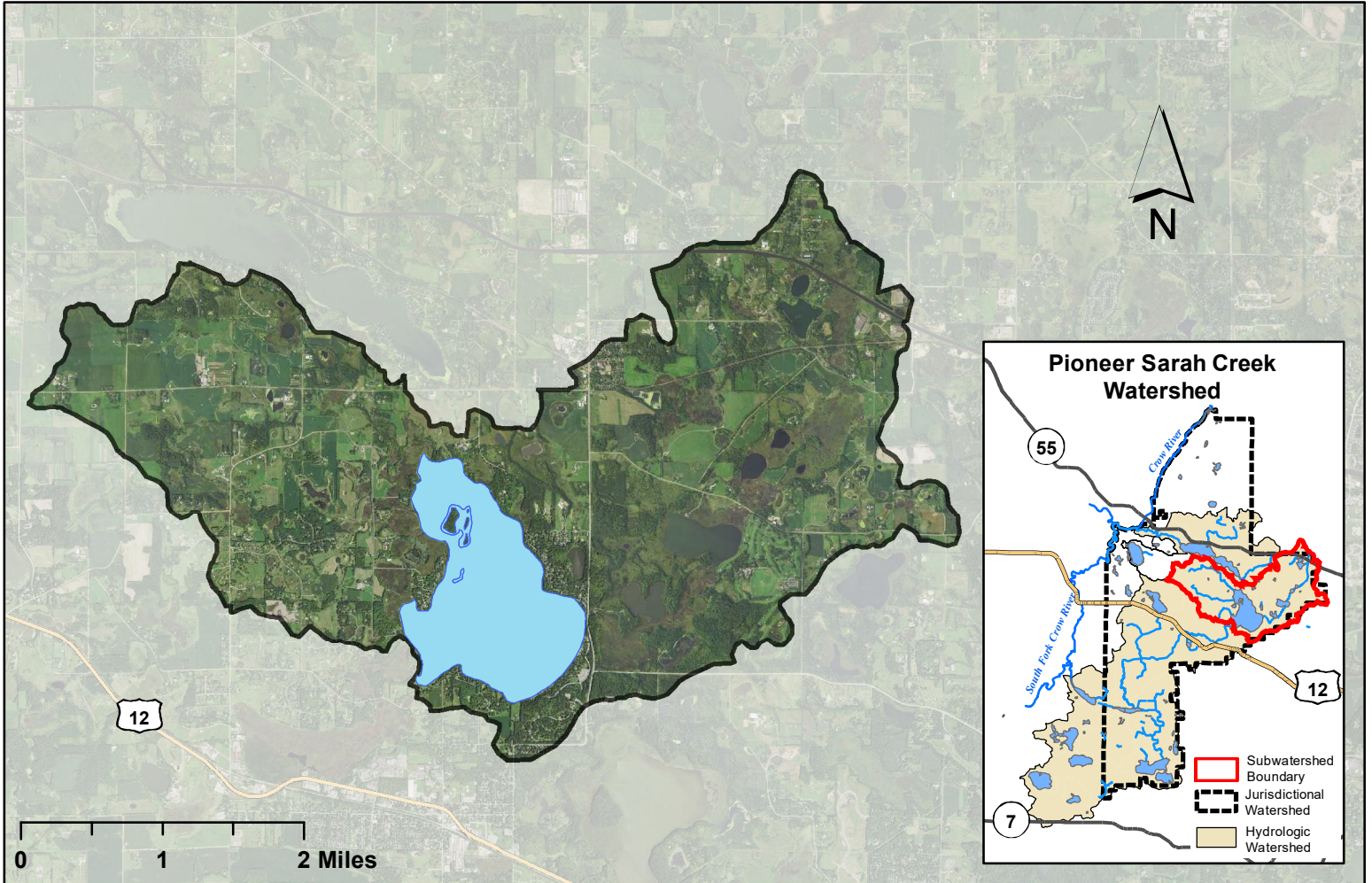
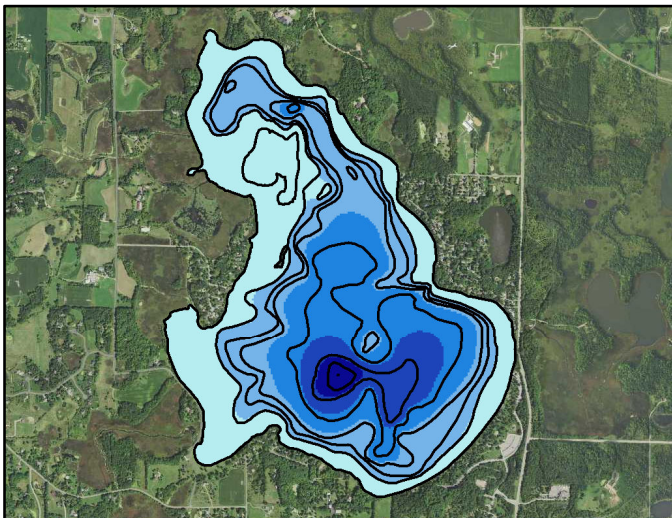


Lake Independence Watershed Map

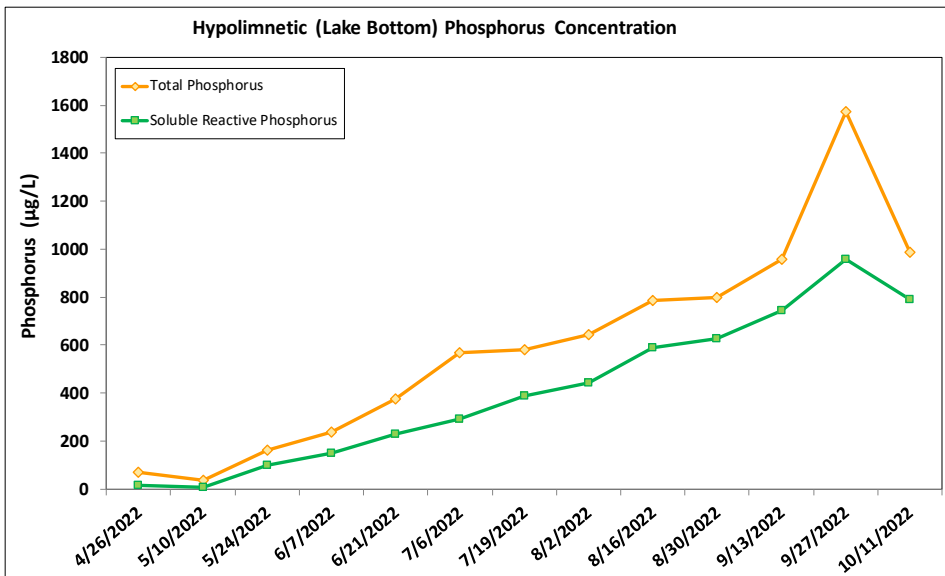
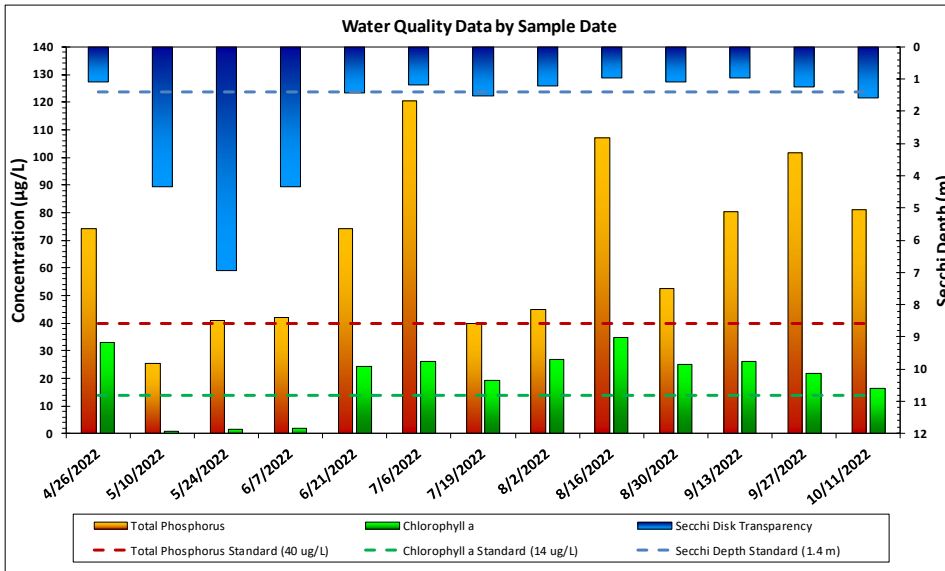
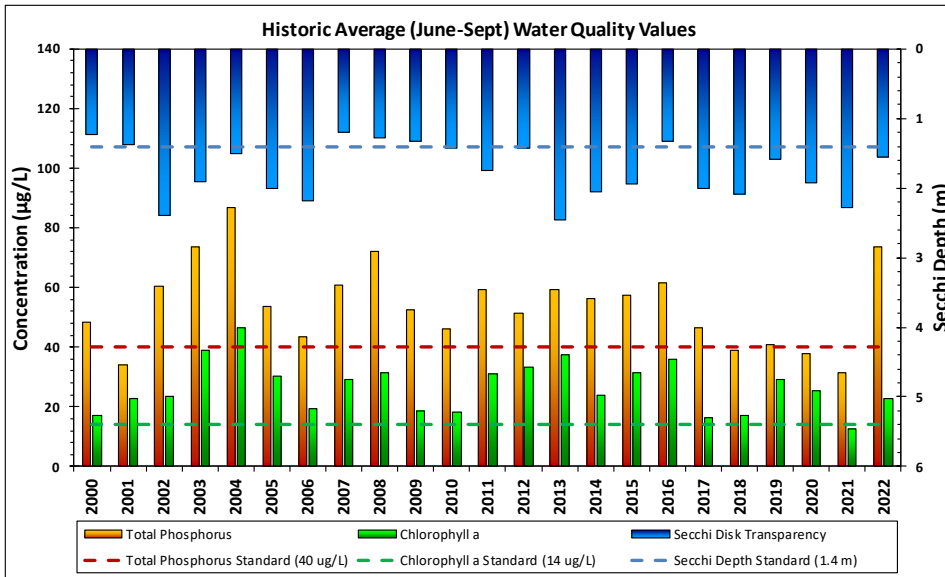


Lake Independence Bathymetry



Lake and Watershed Characteristics

DNR #	27017600
Watershed Area	7,632 Acres
Lake Area	832 Acres
Percent Littoral Area	51%
Average Depth	15.9 ft.
Maximum Depth	58 ft.
Watershed:Lake Ratio	9.2:1
Impairment	Excess Nutrients in 2002
Classification	Deep Lake



Lake Independence Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2000	C	B	C	C+
2001	C	C	C	C
2002	C	C	B	C+
2003	D	C	C	C-
2004	D	C	C	C-
2005	C	C	C	C
2006	C	B	C	C+
2007	C	C	D	C-
2008	D	C	C	C-
2009	C	B	C	C+
2010	C	B	C	C+
2011	C	C	C	C
2012	C	C	C	C
2013	C	C	B	C+
2014	C	C	C	C
2015	C	C	C	C
2016	C	C	C	C
2017	C	B	C	C+
2018	C	B	C	C+
2019	C	C	C	C
2020	C	C	C	C
2021	B	B	B	B
2022	D	C	C	C-
MPCA Standard	C	B	C	C+

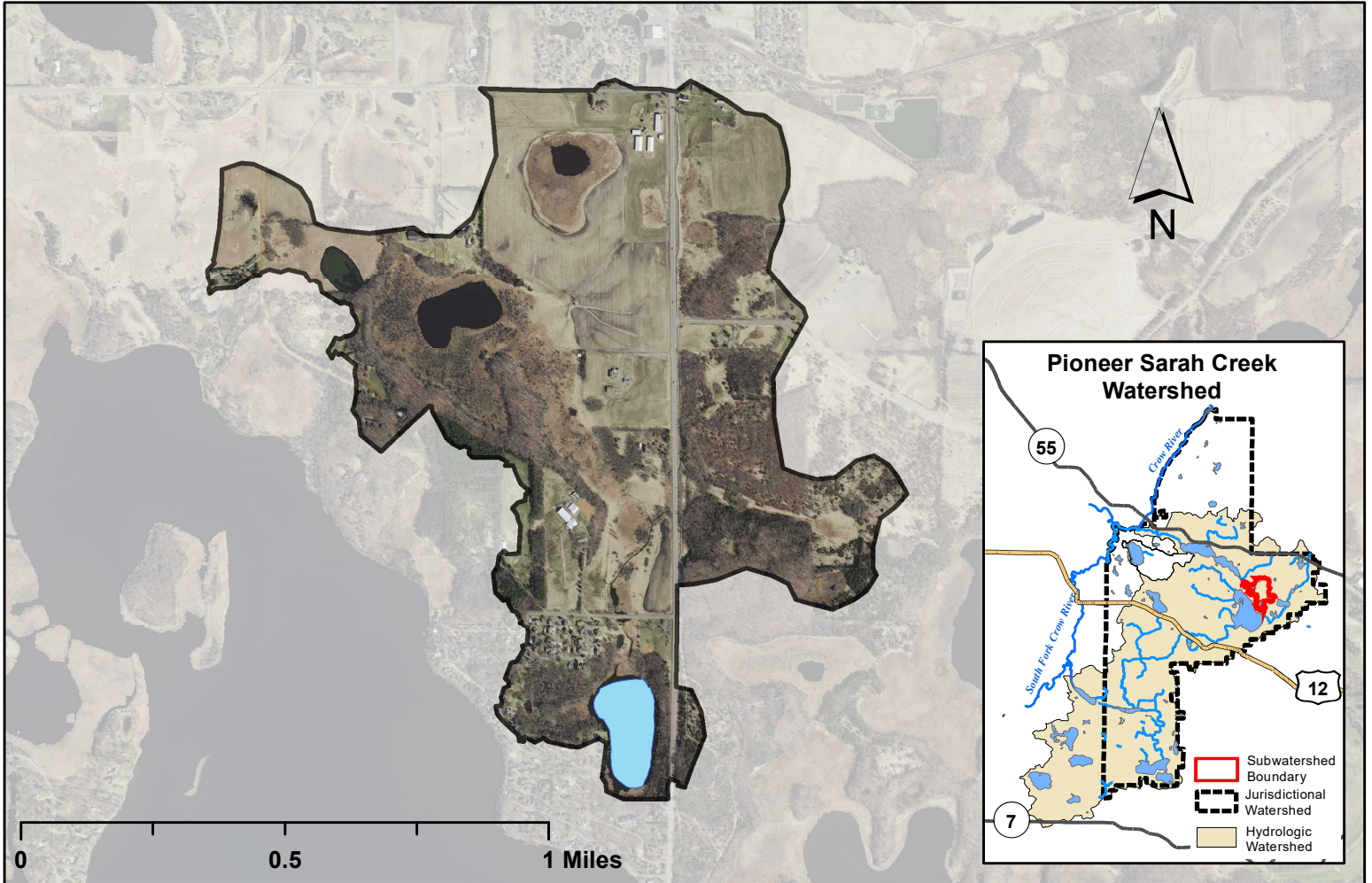
Met Council Grading System for Lake Water Quality

2014: Zebra mussels discovered

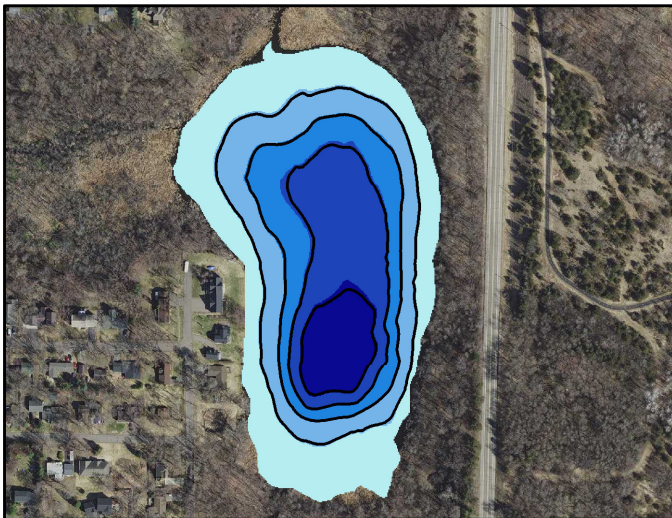
2014: Treated access for zebra mussels

2020: Baker Ravine stabilization

Lake Ardmore Watershed Map

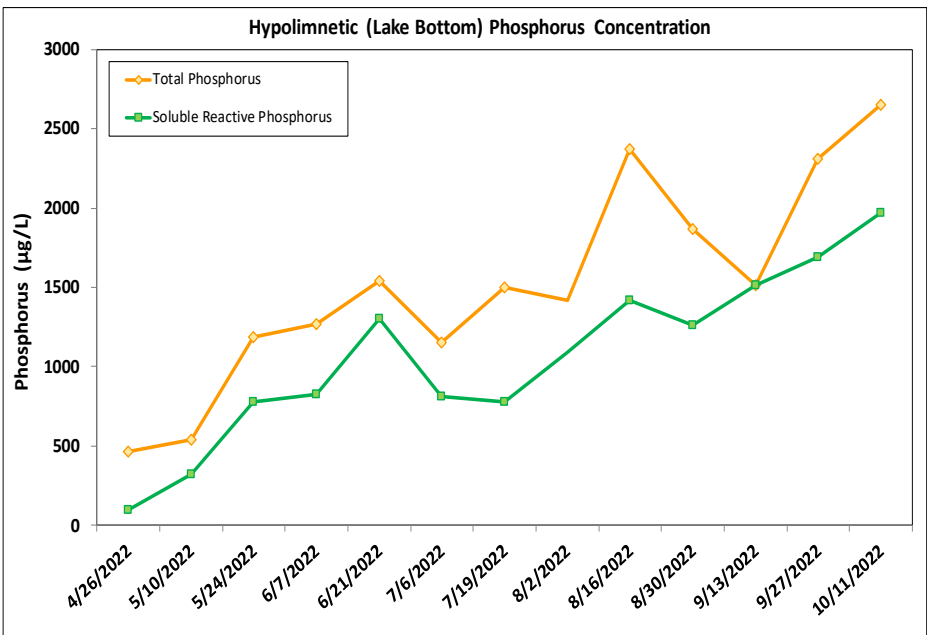
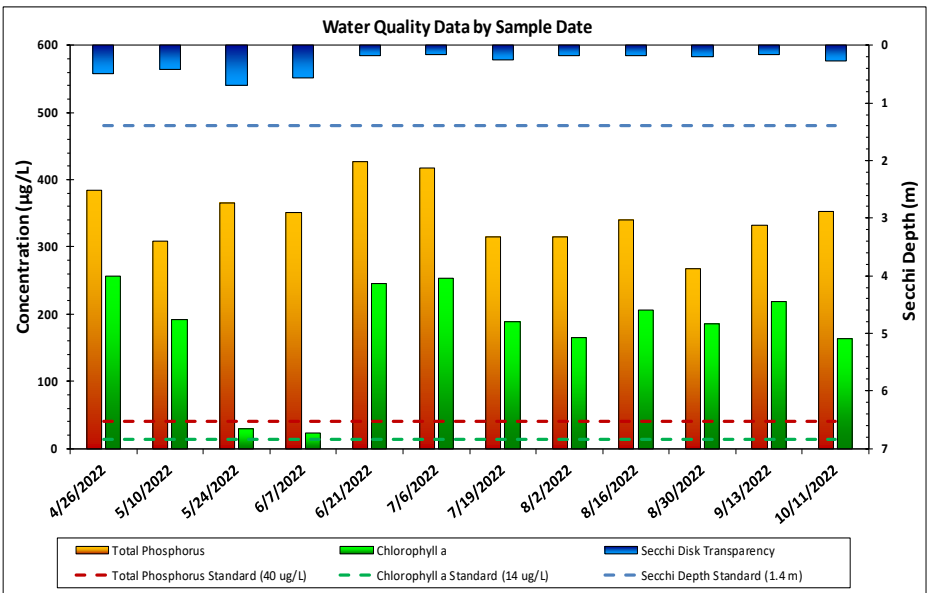
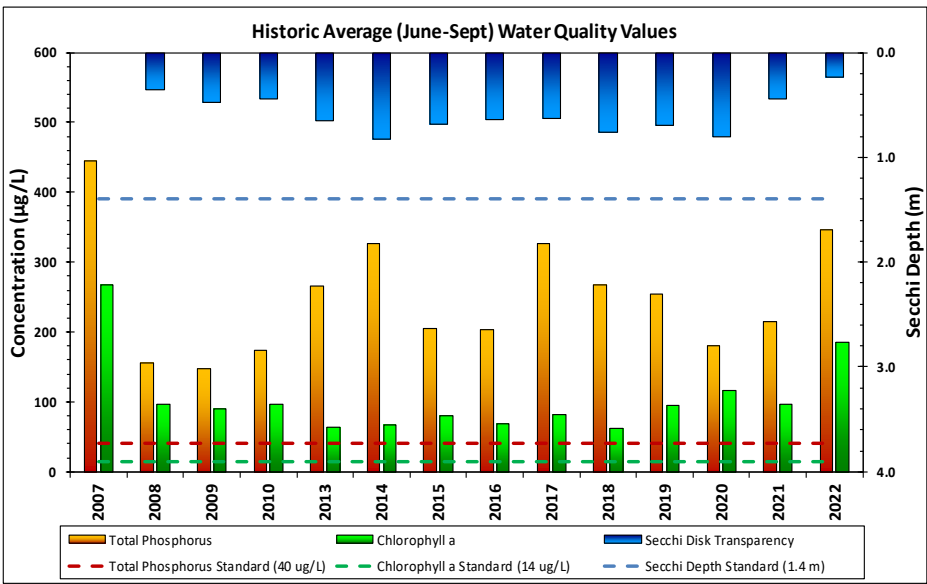


Lake Ardmore Bathymetry



Lake and Watershed Characteristics

DNR #	27015300
Watershed Area	514 Acres
Lake Area	13.5 Acres
Percent Littoral Area	75%
Average Depth	9.4 ft.
Maximum Depth	24.4 ft.
Watershed:Lake Ratio	38:1
Impairment	Excess Nutrients in 2016
Classification	Deep Lake

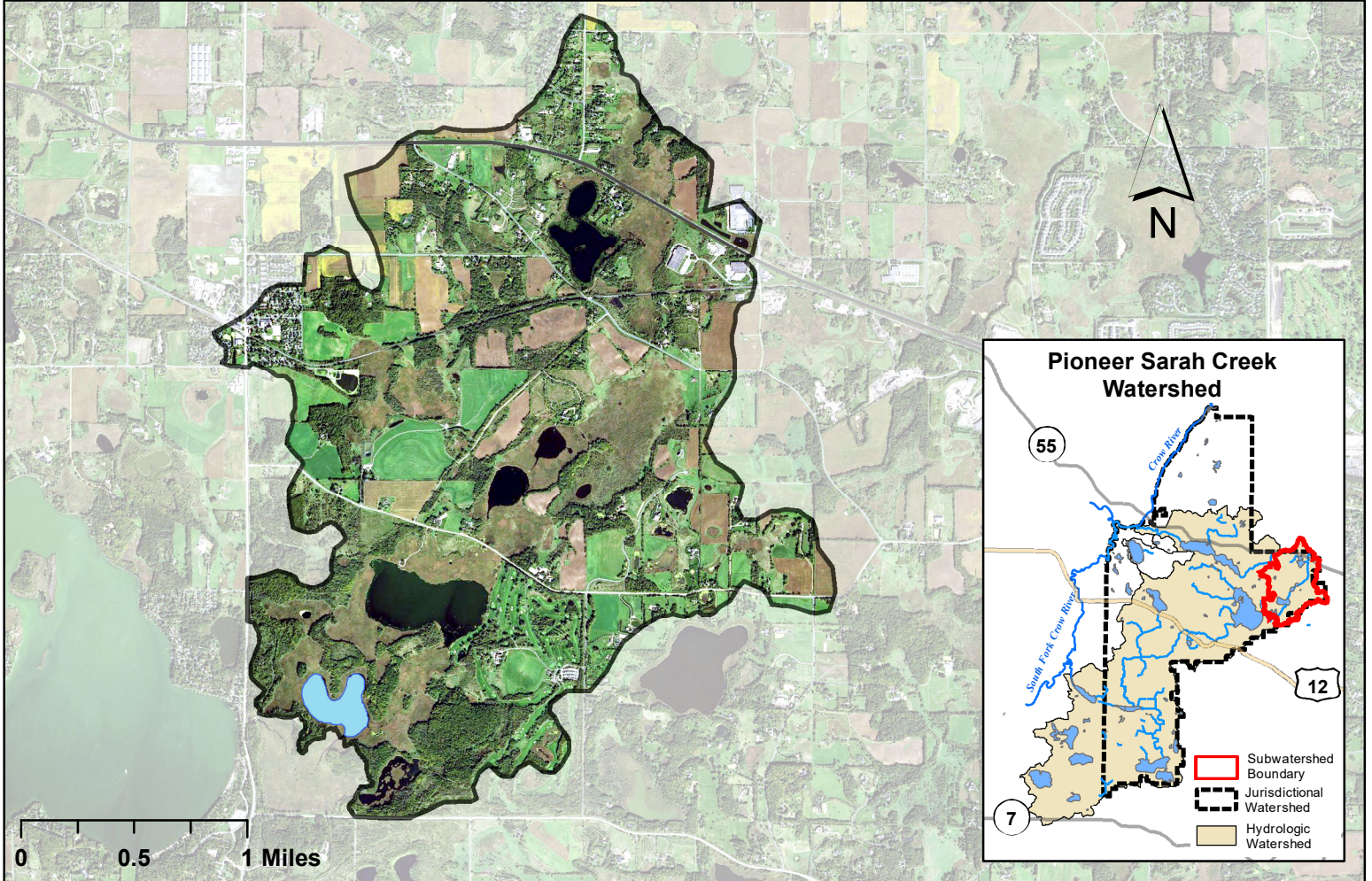


Ardmore Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2007	F		F	F
2008	F	F	F	F
2009	F	F	F	F
2010	F	F	F	F
2013	D	F	F	D
2014	D	D	D-	D
2015	F	F	F	F
2016	D	F	F	D
2017	F	F	F	F
2018	D	D	D-	D
2019	F	F	F	F
2020	F	F	D	F
2021	F	F	F	F
2022	F	F	F	F
MPCA Standard	C	B	C	C+

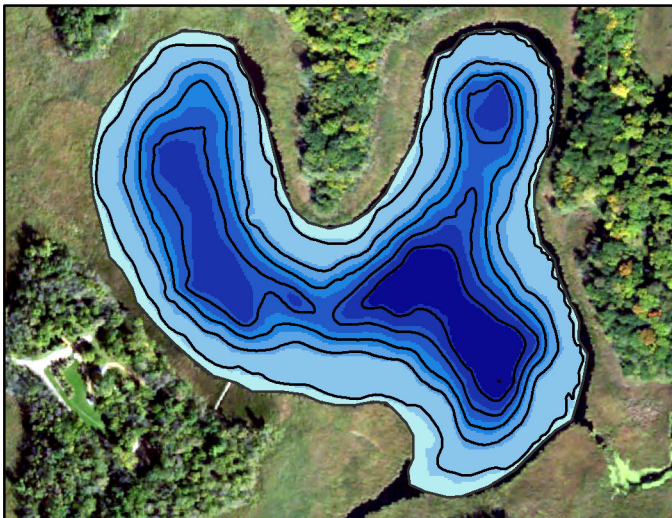
Met Council Grading System for Lake Water Quality

2021: Carp barrier installed

Half Moon Lake Watershed Map

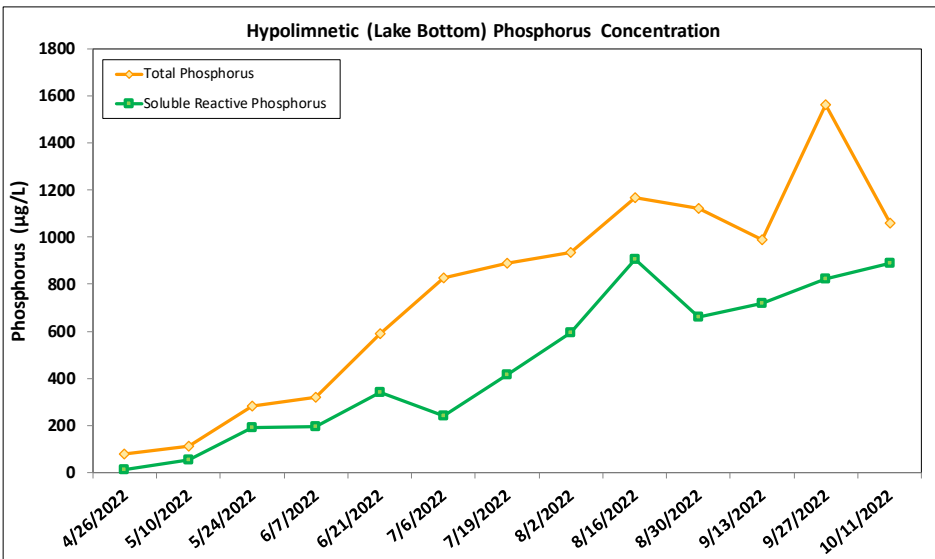
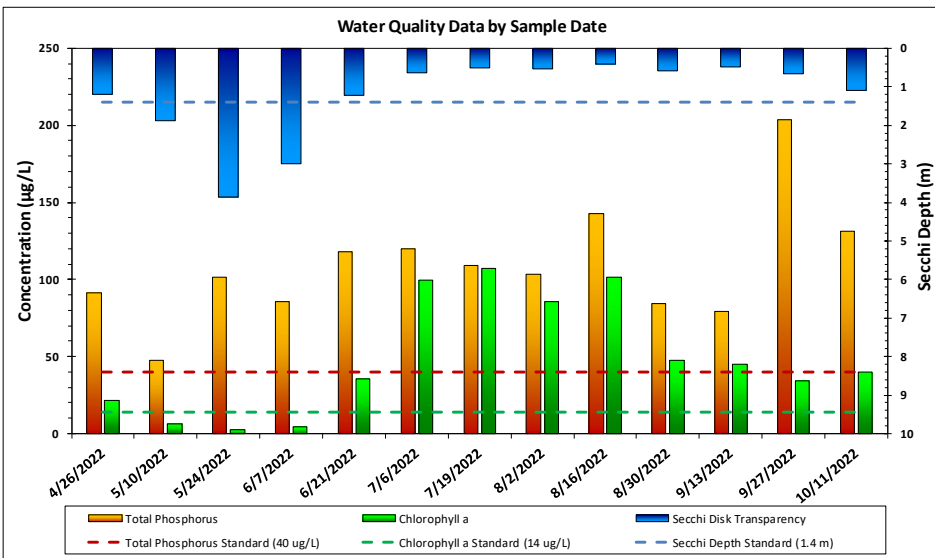
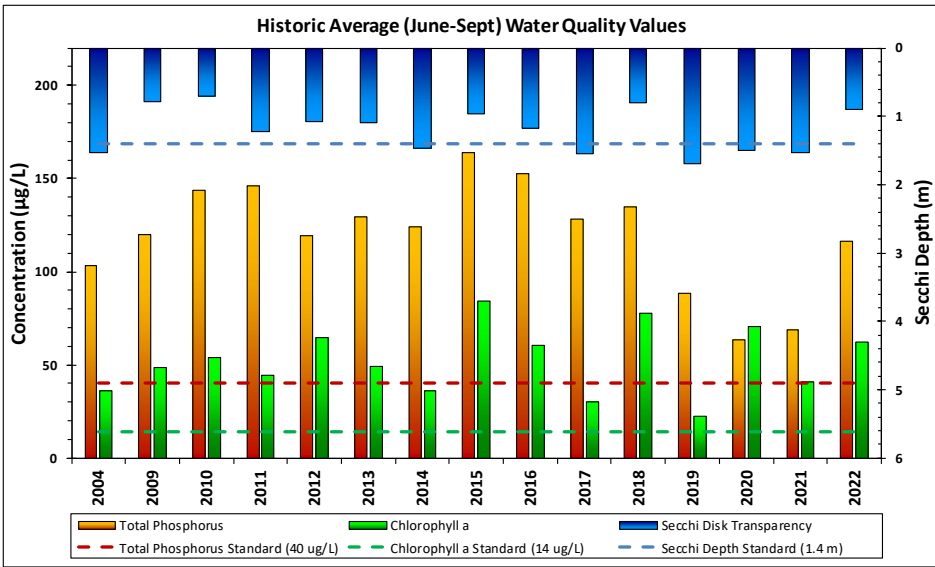


Half Moon Lake Bathymetry



Lake and Watershed Characteristics

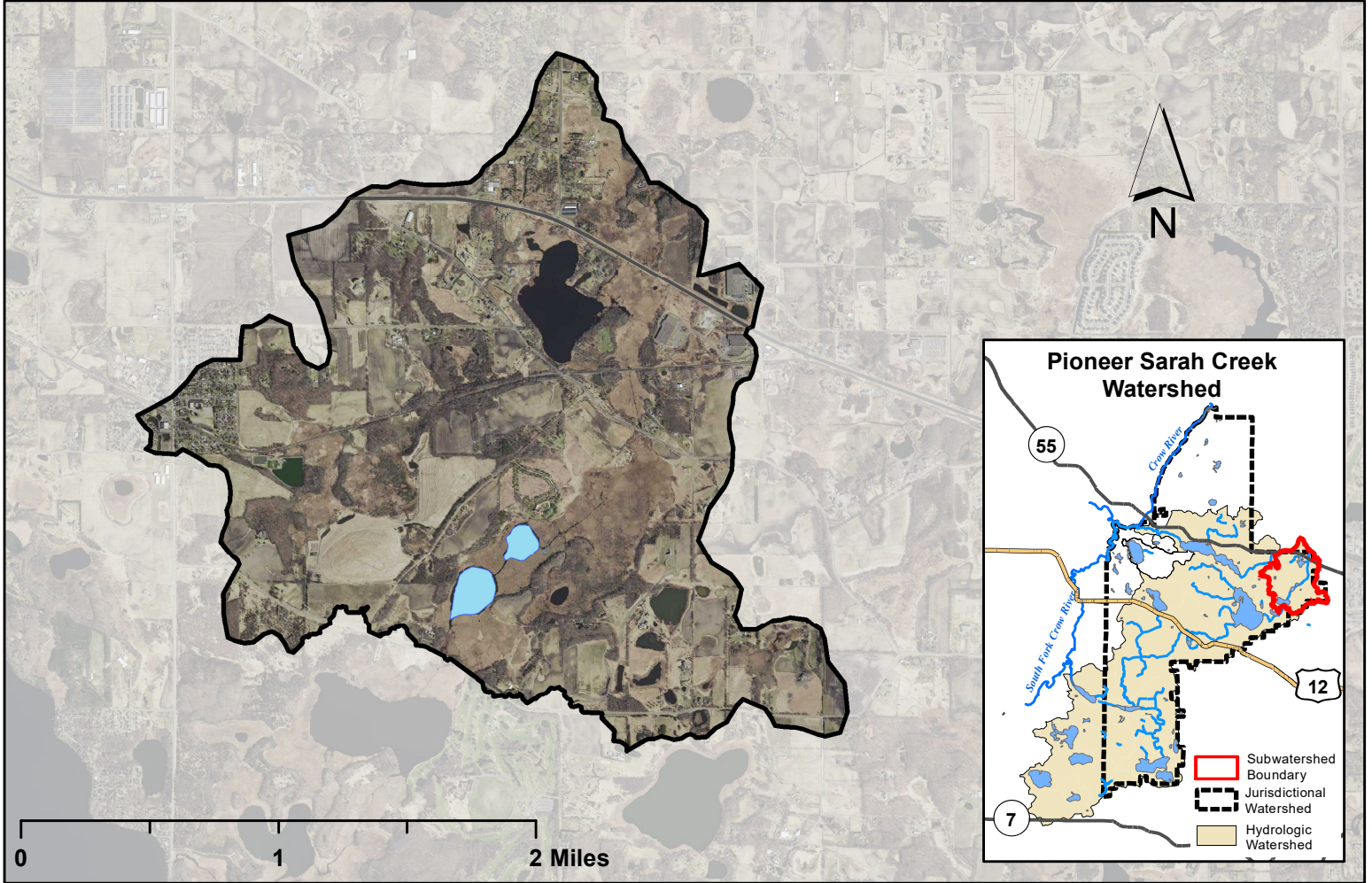
DNR #	27015200
Watershed Area	3,258 Acres
Lake Area	31.1 Acres
Percent Littoral Area	11%
Average Depth	13.4 ft.
Maximum Depth	30.3 ft.
Watershed:Lake Ratio	104.7:1
Impairment Classification	Excess Nutrients in 2016 Deep Lake



Half Moon Lake Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2004	D	C	C	C-
2009	D	D	D	D
2010	D	D	D	D
2011	D	C	C	C-
2012	D	D	D	D
2013	D	D	D	D
2014	D	C	C	C-
2015	F	F	D	F
2016	D	D	D	D
2017	D	C	C	C-
2018	D	F	D	D-
2019	D	C	C	C-
2020	C	D	C	C-
2021	D	C	C	C-
2022	D	D	D	D
MPCA Standard	C	B	C	C+

Met Council Grading System for Lake Water Quality

Thomas and Winterhalter Watershed Map

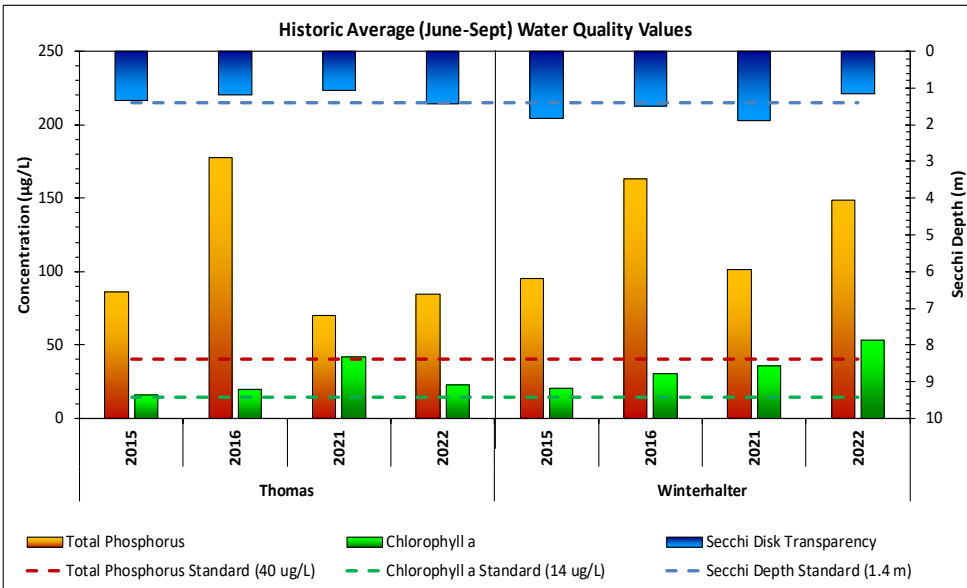


Thomas and Winterhalter



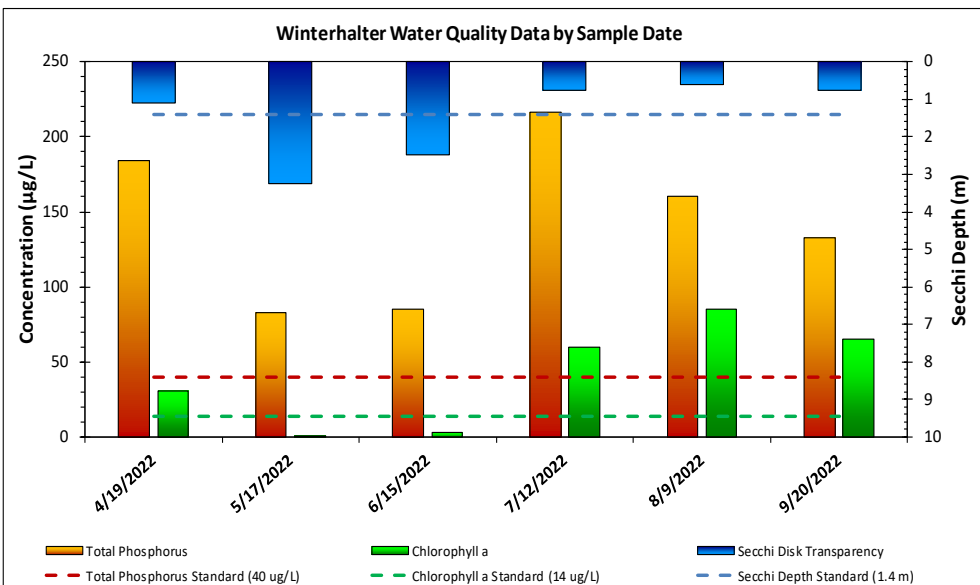
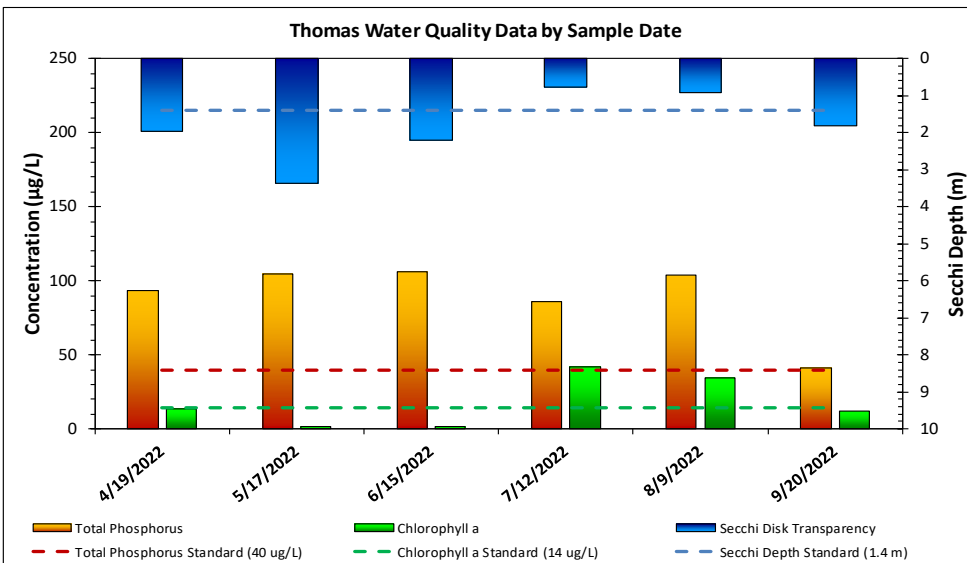
Lake and Watershed Characteristics

DNR #	
Thomas	27050100
Winterhalter	27014800
Watershed Area	2,253 Acres
Lake Area	
Thomas	8.8 Acres
Winterhalter	16.4 Acres
Percent Littoral Area	Unknown
Average Depth	Unknown
Maximum Depth (Winterhalter)	27 ft.
Watershed Area:Total Lake Area	89.4:1
Impairment	None
Classification	Deep Lake

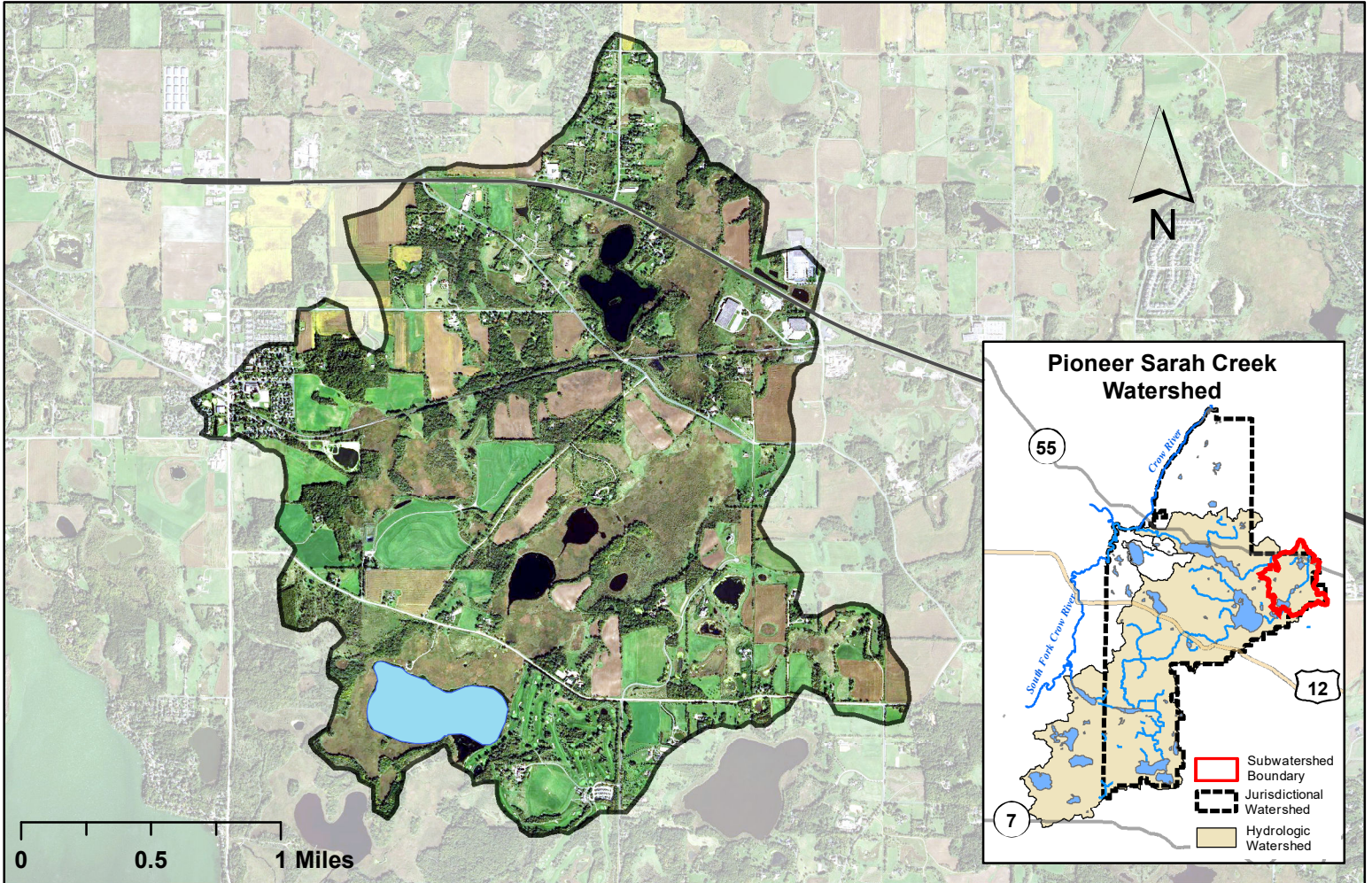


Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
Thomas Lake				
2015	D	B	C	C
2016	F	B	D	D+
2021	D	C	D	D+
2022	D	C	C	C-
Winterhalter Lake				
2015	D	C	C	C-
2016	F	C	C	D+
2021	D	C	C	C-
2022	D	D	D	D
MPCA Standard	C	C	D	C-

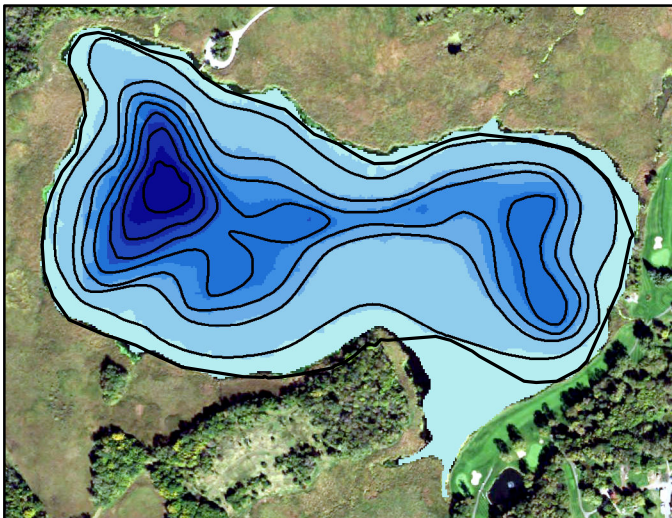
Met Council Grading System for Lake Water Quality



Spurzem Lake Watershed Map

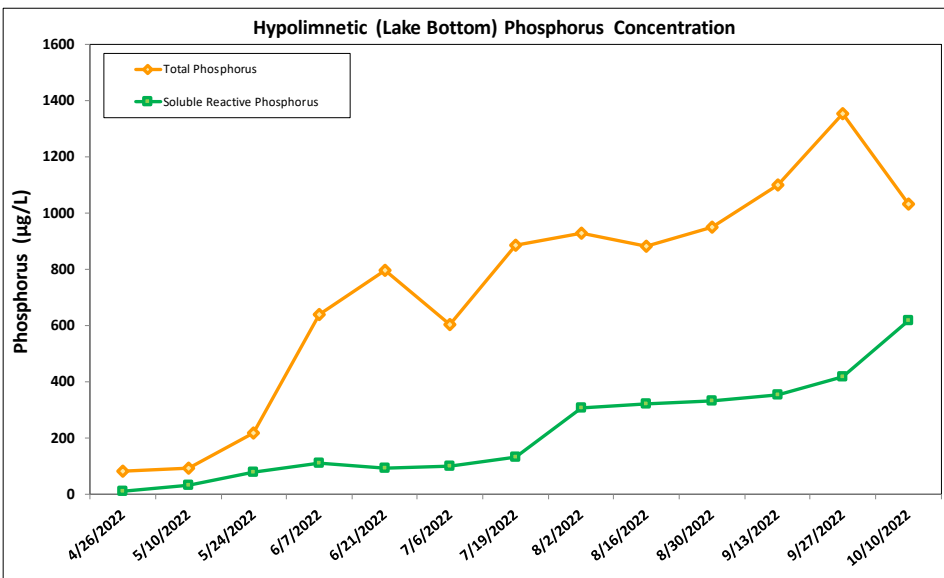
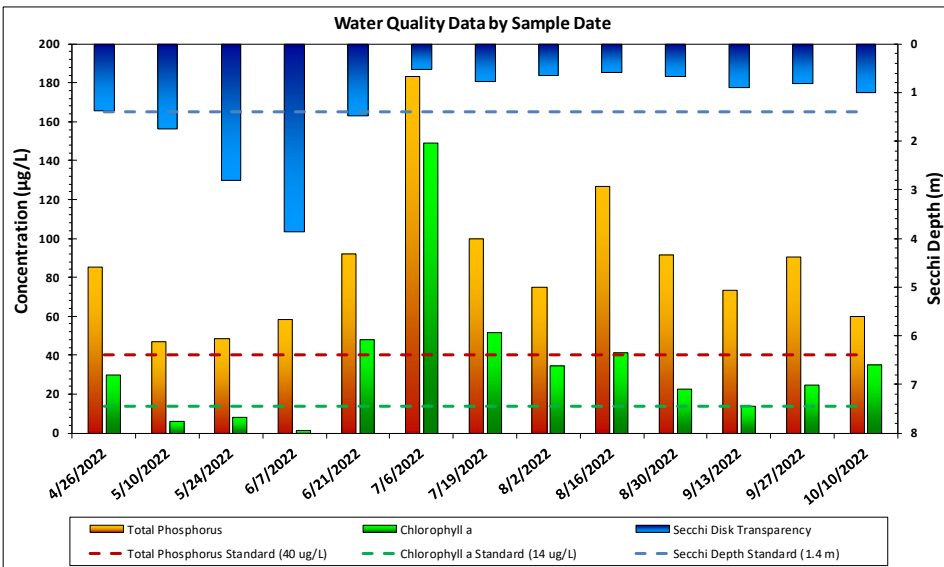
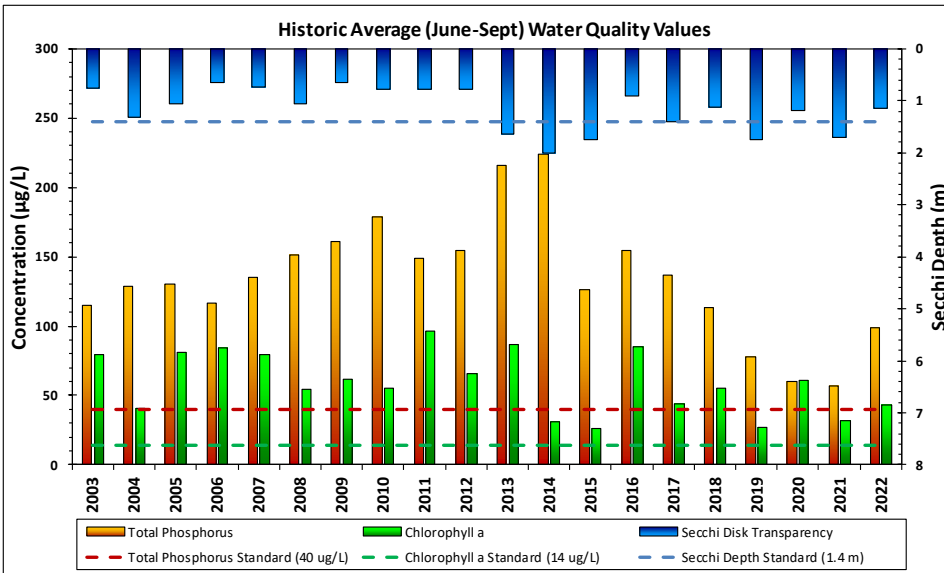


Spurzem Lake Bathymetry



Lake and Watershed Characteristics

DNR #	27014900
Watershed Area	2,915 Acres
Lake Area	78.6 Acres
Percent Littoral Area	70%
Average Depth	11.1 ft.
Maximum Depth	37.4 ft.
Watershed:Lake Ratio	37.1:1
Impairment Classification	Excess Nutrients in 2008 Deep Lake

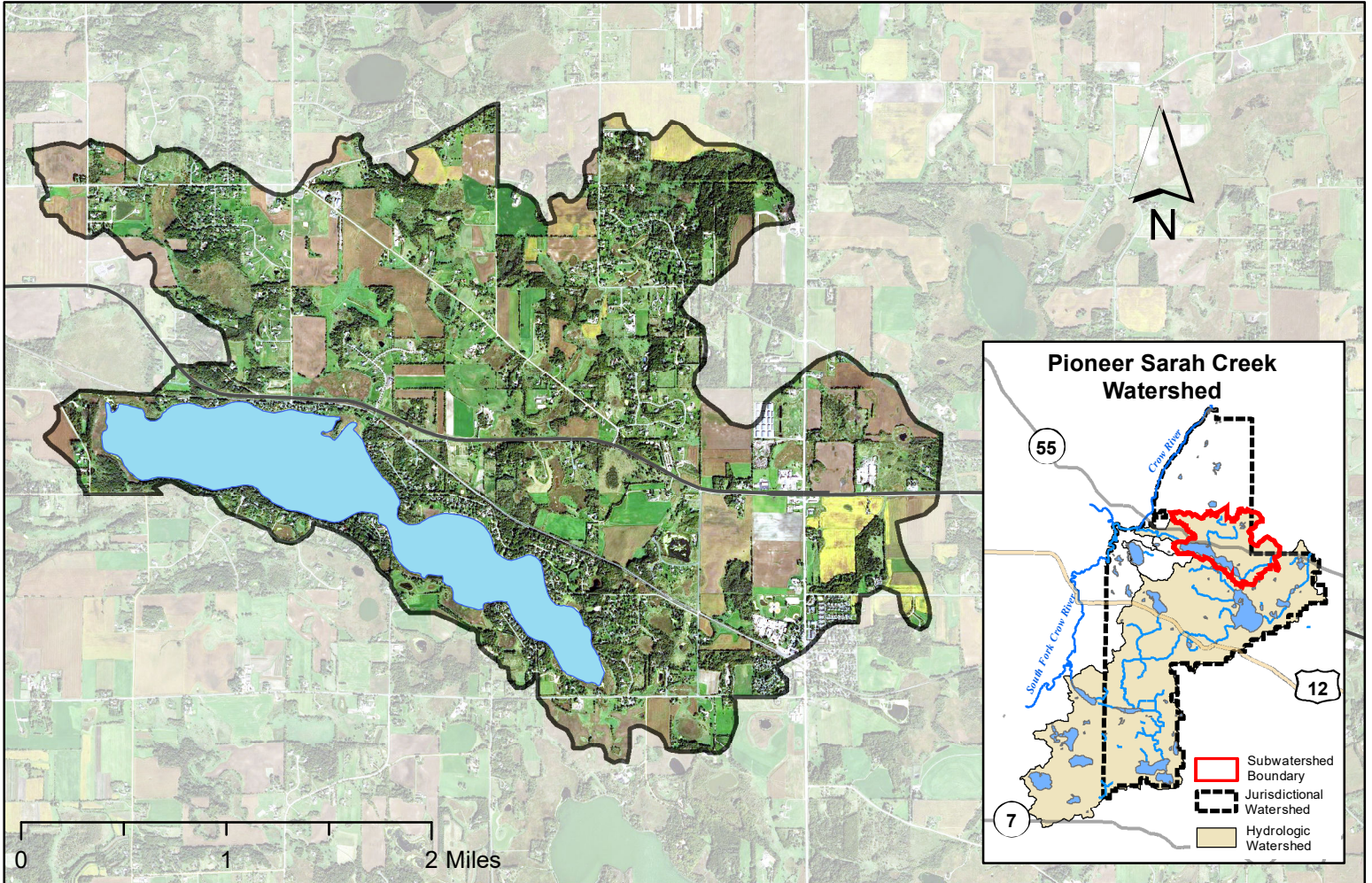


Spurzem Lake Water Quality Report Card

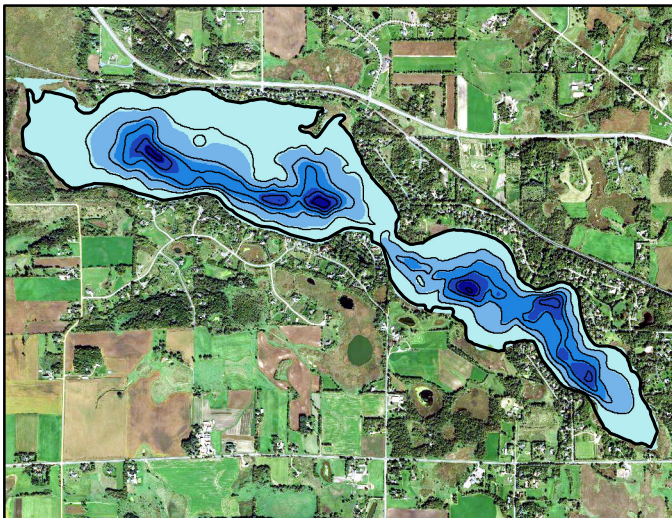
Year	TP	Chl-a	Secchi	Avg Grade
2003	D	F	D	D-
2004	D	C	C	C-
2005	D	F	D	D-
2006	D	F	F	F
2007	D	F	D	D-
2008	D	D	D	D
2009	F	D	F	F
2010	F	D	D	D-
2011	D	F	D	D-
2012	F	D	D	D-
2013	F	F	C	D-
2014	F	C	C	D+
2015	D	C	C	C-
2016	F	F	D	F
2017	D	C	C	C-
2018	D	D	D	D
2019	D	C	C	C-
2020	C	D	D	D+
2021	C	C	C	C
2022	D	C	D	D+
MPCA Standard	C	B	C	C+

Met Council Grading System for Lake Water Quality

Lake Sarah Watershed Map

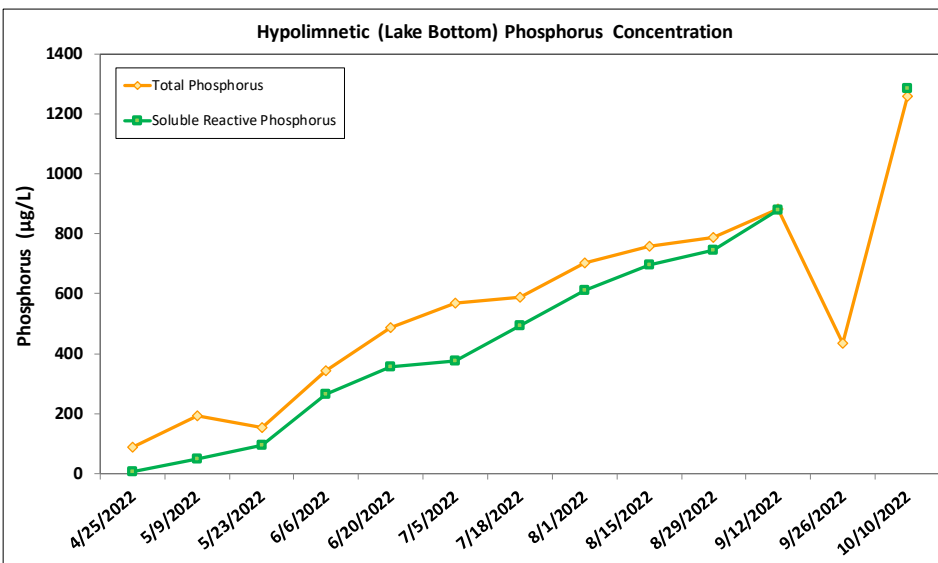
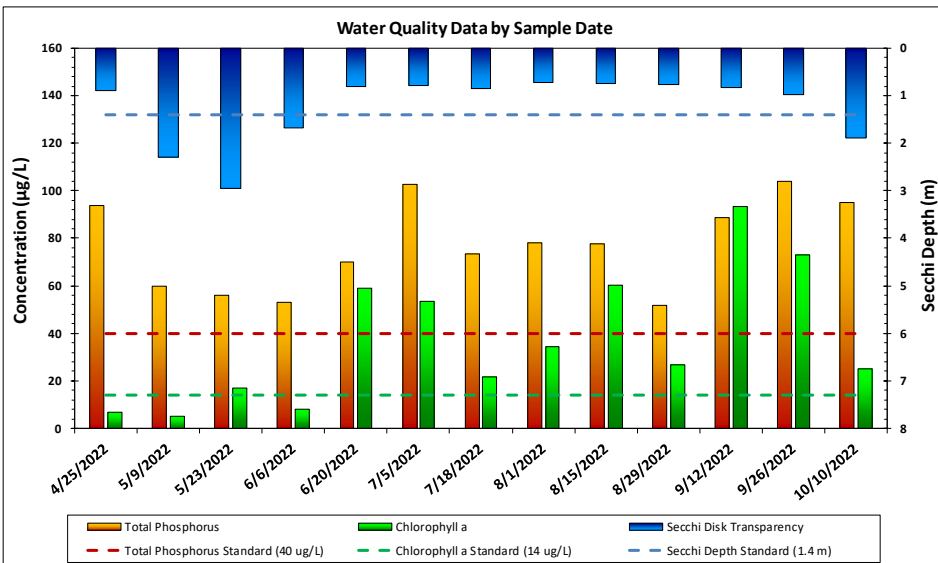
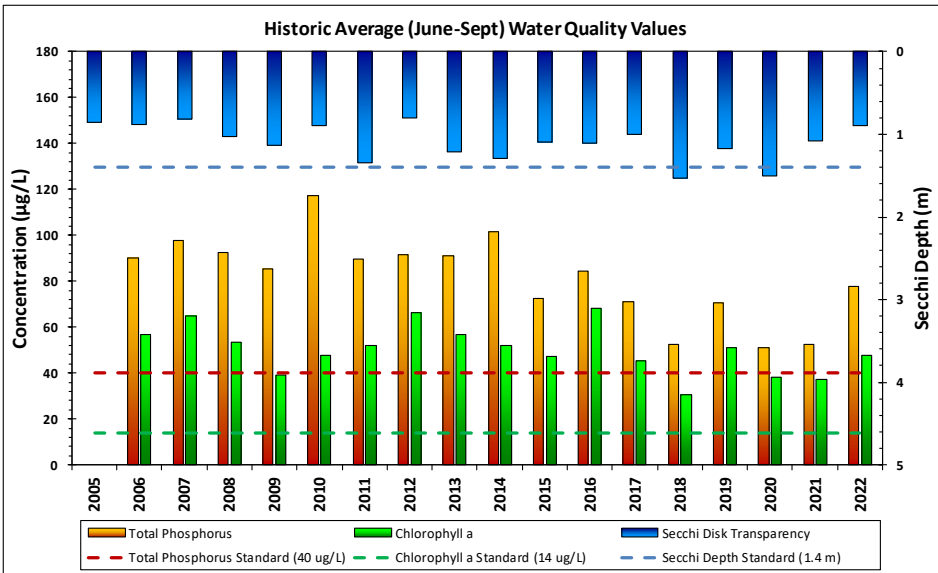


Lake Sarah Bathymetry



Lake and Watershed Characteristics

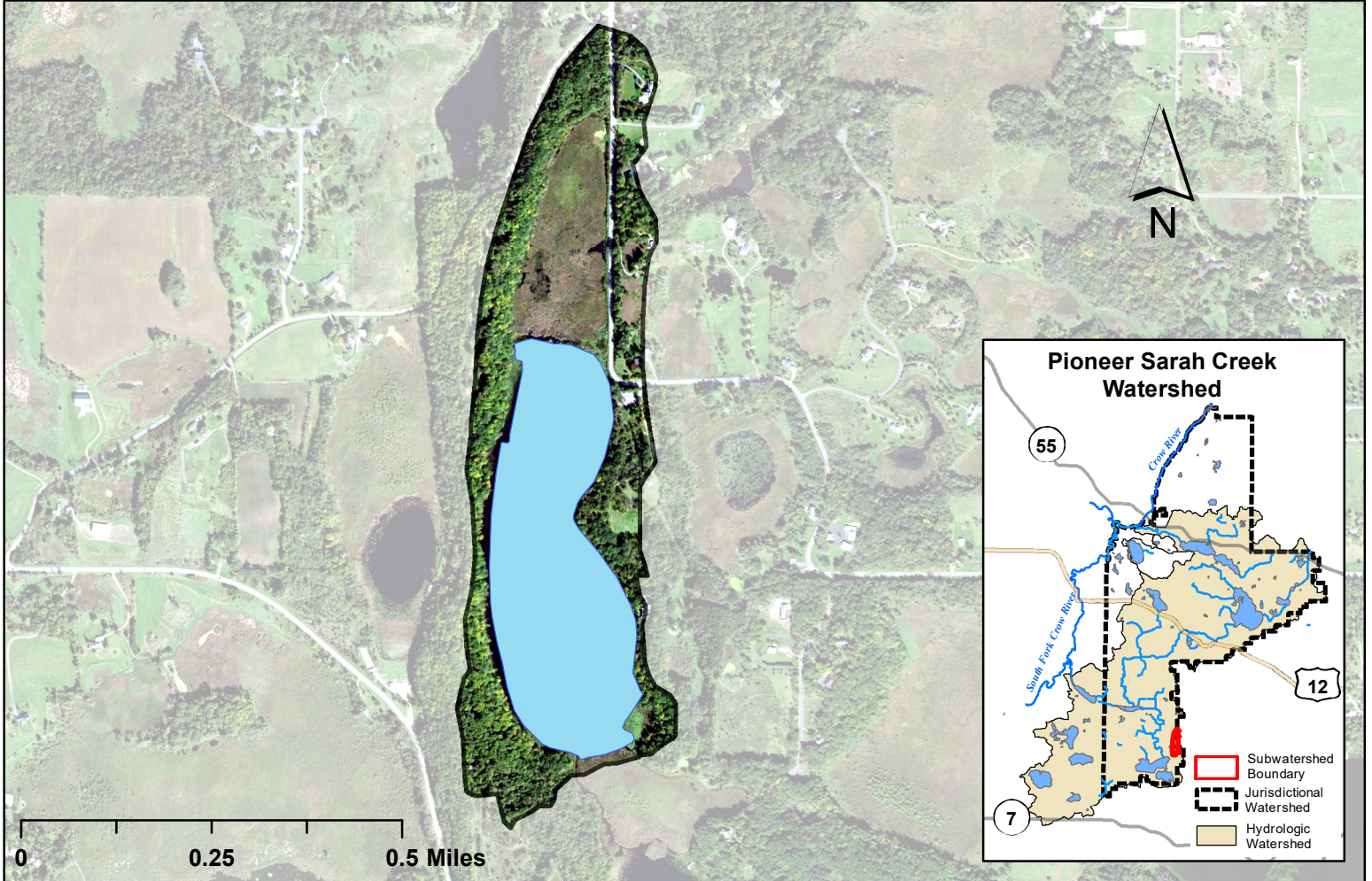
DNR #	27019100
Watershed Area	4,519 Acres
Lake Area	536 Acres
Percent Littoral Area	61%
Average Depth	13.7 ft.
Maximum Depth	49.9 ft.
Watershed:Lake Ratio	8.4:1
Impairment Classification	Excess Nutrients in 2006 Deep Lake



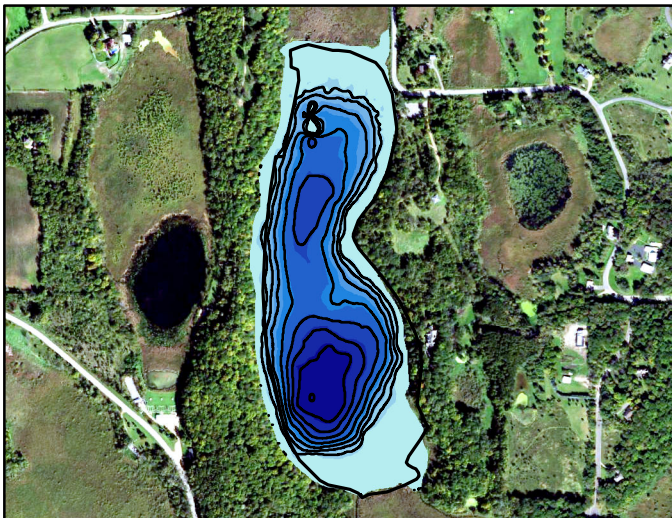
Lake Sarah Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2005			D	D
2006	D	D	D	D
2007	D	D	D	D
2008	D	D	D	D
2009	D	C	D	D+
2010	D	C	D	D+
2011	D	D	C	D+
2012	D	D	D	D
2013	D	D	C	D+
2014	D	D	C	D+
2015	D	C	D	D+
2016	D	D	D	D
2017	D	C	D	D+
2018	C	C	C	C
2019	D	D	D	D
2020	C	C	C	C
2021	C	C	D	C-
2022	D	C	D	D+
MPCA Standard	C	B	C	C+

Met Council Grading System for Lake Water Quality

Little Long Lake Watershed Map

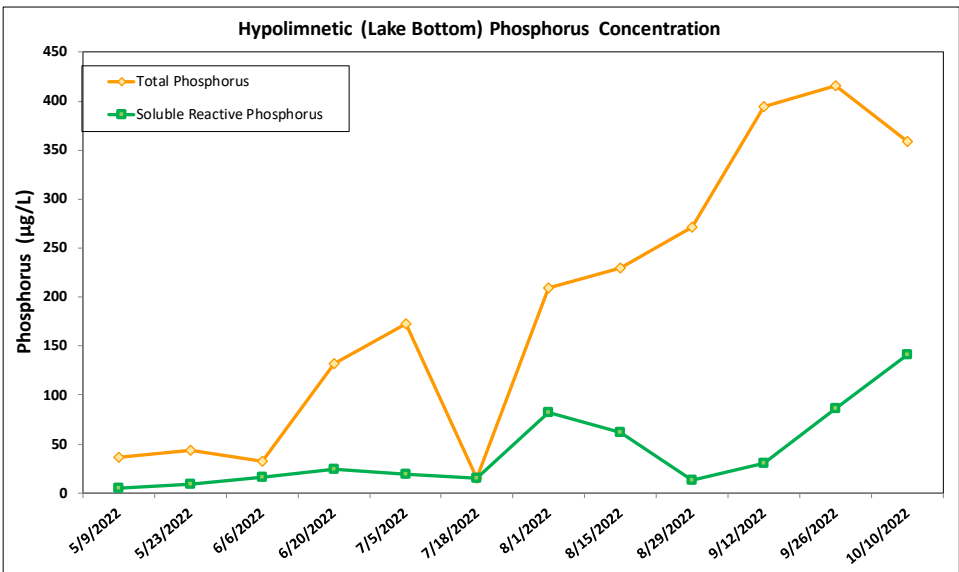
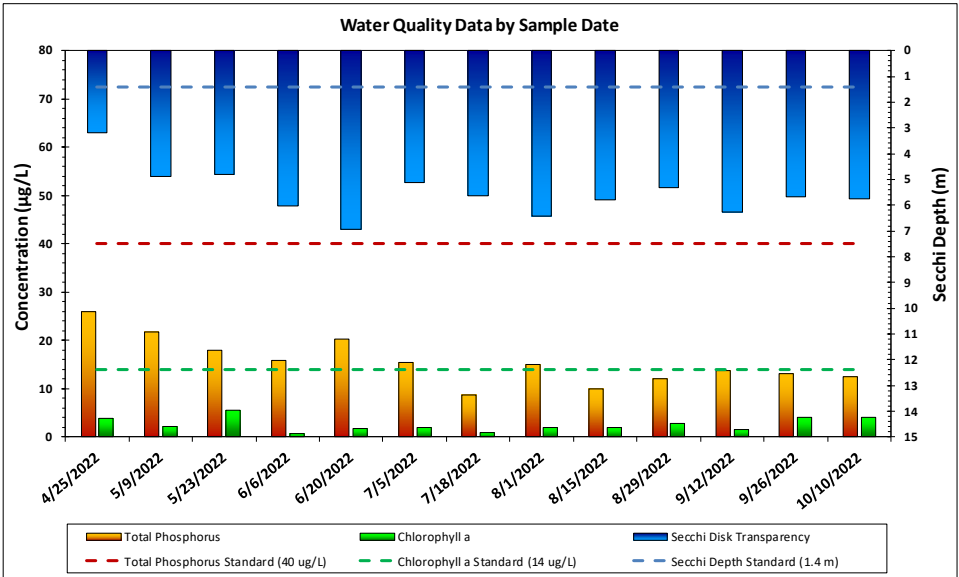
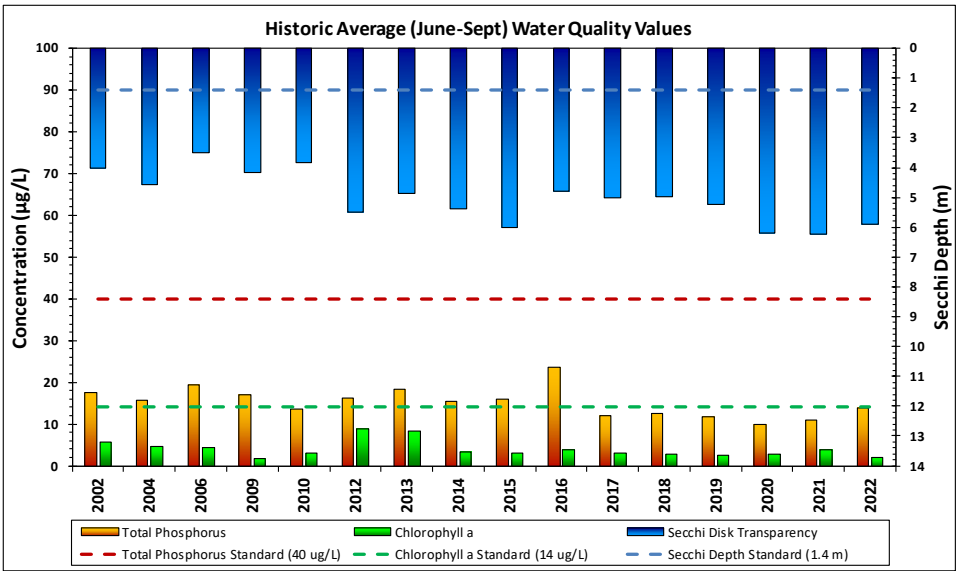


Little Long Lake Bathymetry



Lake and Watershed Characteristics

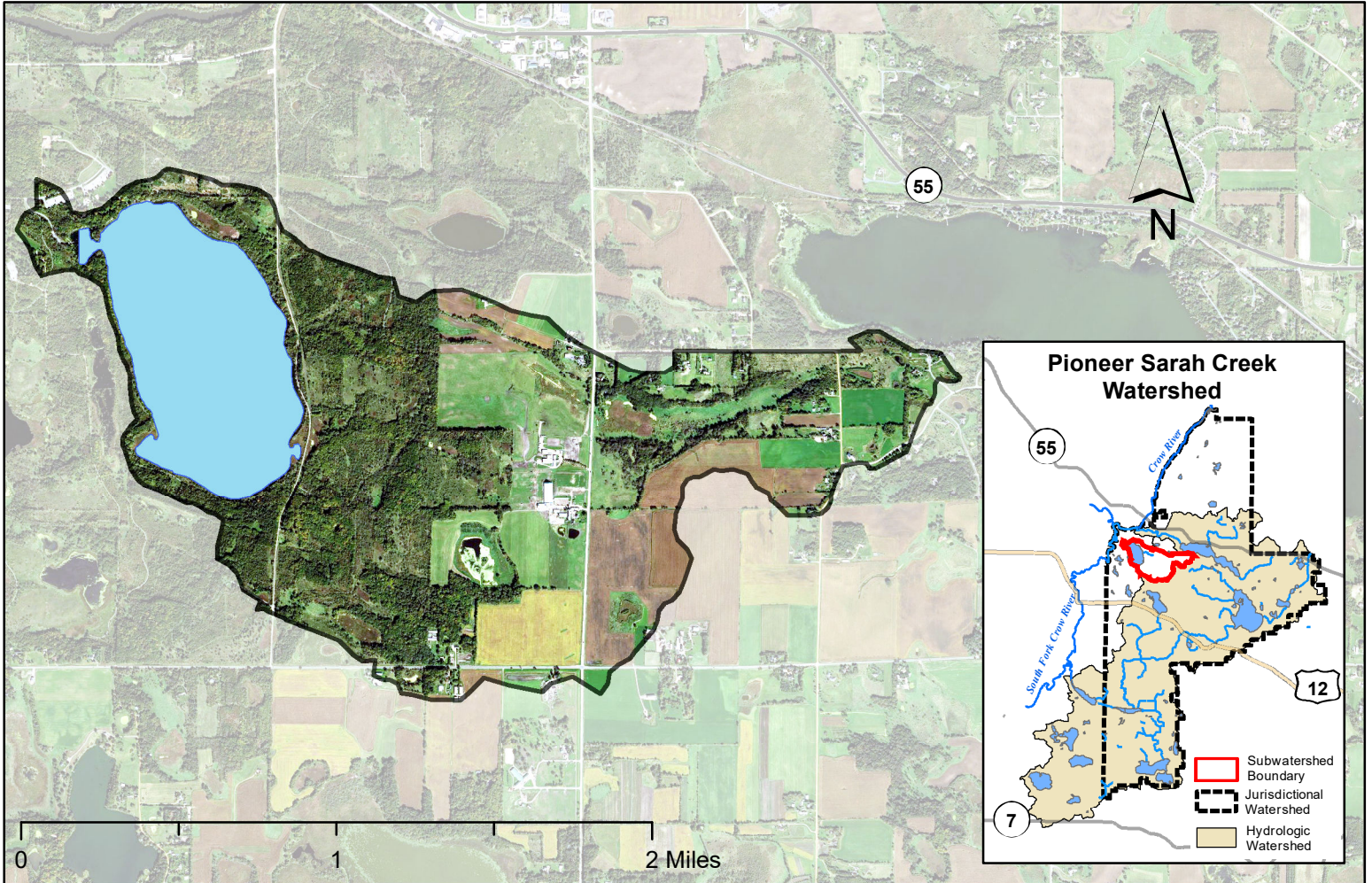
DNR #	27017900
Watershed Area	92 Acres
Lake Area	53.5 Acres
Percent Littoral Area	40%
Average Depth	27.8 ft.
Maximum Depth	80.5 ft.
Watershed:Lake Ratio	1.7:1
Impairment	None
Classification	Deep Lake



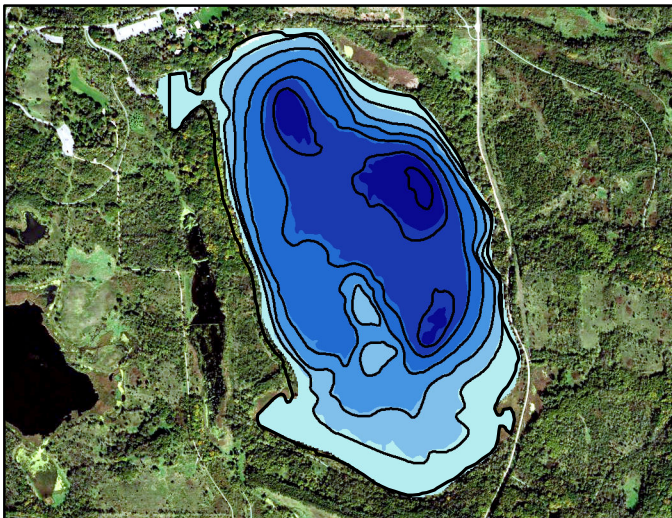
Little Long Lake Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2002	A	A	A	A
2004	A	A	A	A
2006	A	A	A	A
2009	A	A	A	A
2010	A	A	A	A
2012	A	A	A	A
2013	A	A	A	A
2014	A	A	A	A
2015	A	A	A	A
2016	B	A	A	A-
2017	A	A	A	A
2018	A	A	A	A
2019	A	A	A	A
2020	A	A	A	A
2021	A	A	A	A
2022	A	A	A	A
MPCA Standard	C	B	C	C+

Met Council Grading System for Lake Water Quality

Lake Rebecca Watershed Map

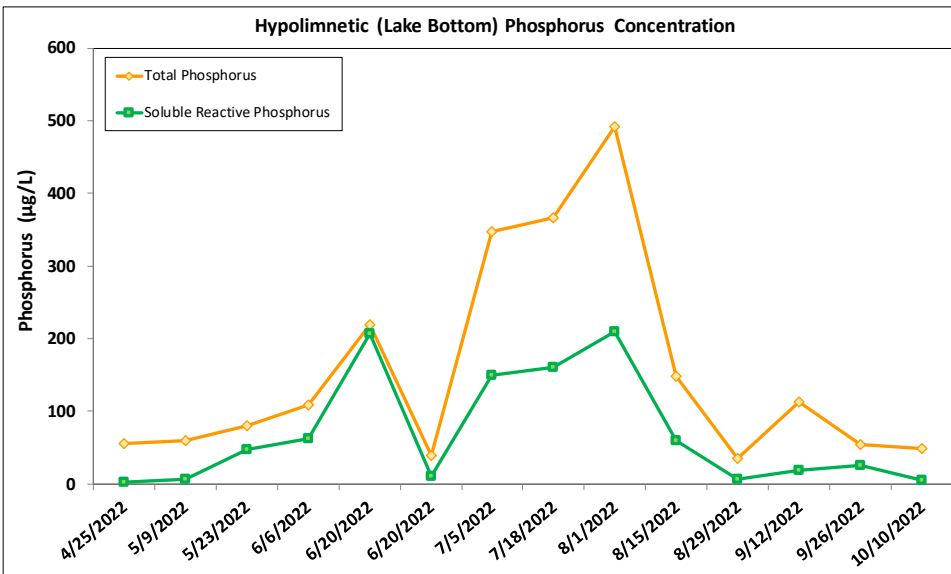
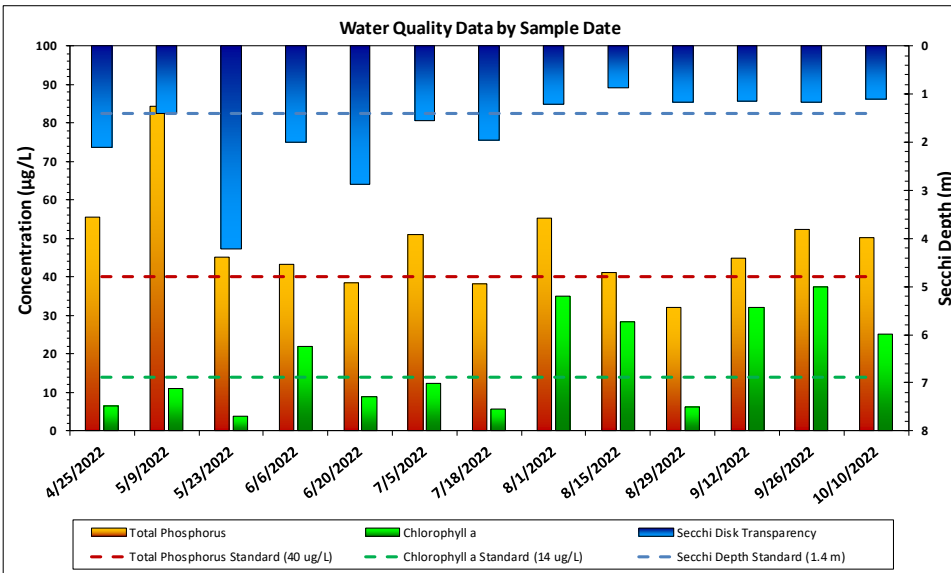
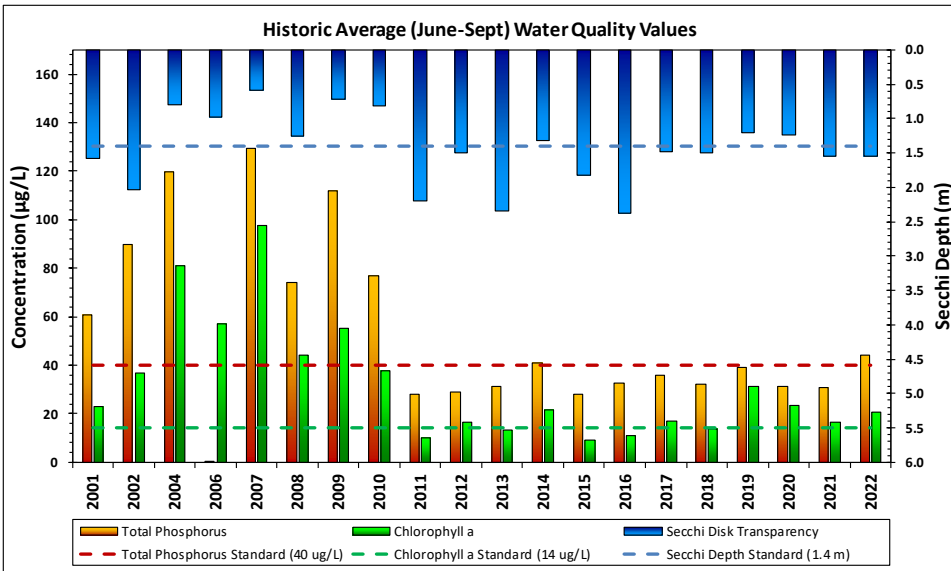


Lake Rebecca Bathymetry



Lake and Watershed Characteristics

DNR #	27019200
Watershed Area	1,277 Acres
Lake Area	261 Acres
Percent Littoral Area	50%
Average Depth	14.4 ft.
Maximum Depth	31.1 ft.
Watershed:Lake Ratio	4.9:1
Impairment:	Excess Nutrients in 2008
	De-listed: 2018
Classification:	Deep Lake



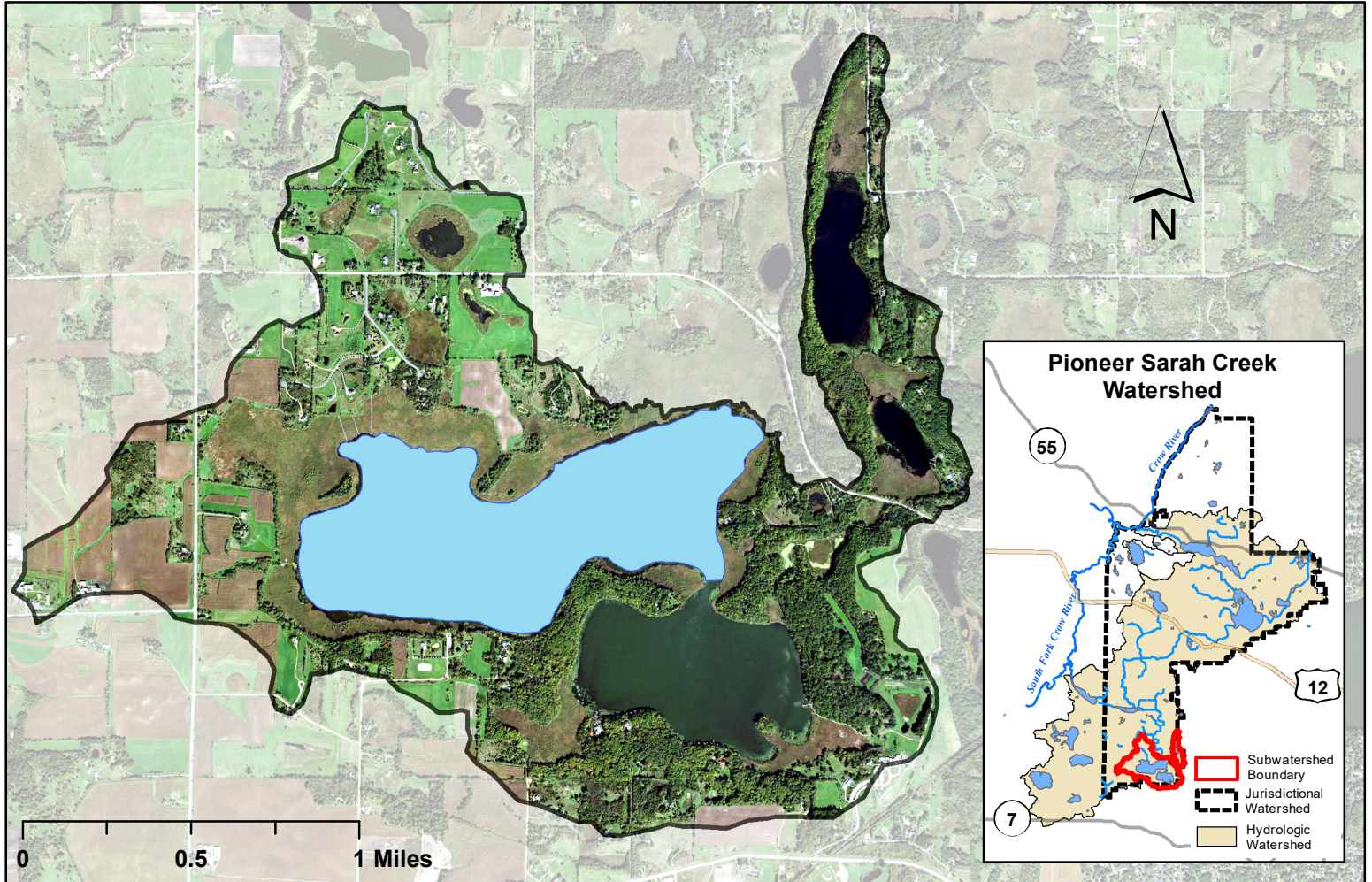
Lake Rebecca Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2001	C	C	C	C
2002	D	C	C	C-
2004	D	F	D	D-
2006	A	D	D	C
2007	D	F	F	F
2008	D	C	C	C-
2009	D	D	D	D
2010	D	C	D	D+
2011	B	B	B	B
2012	B	B	C	B-
2013	B	B	B	B
2014	C	C	C	C
2015	B	A	C	B
2016	C	B	B	B-
2017	C	B	C	C+
2018	C	B	C	C+
2019	C	C	C	C
2020	B	C	C	C+
2021	B	B	C	B-
2022	C	C	C	C
MPCA Standard	C	B	C	C+

Met Council Grading System for Lake Water Quality

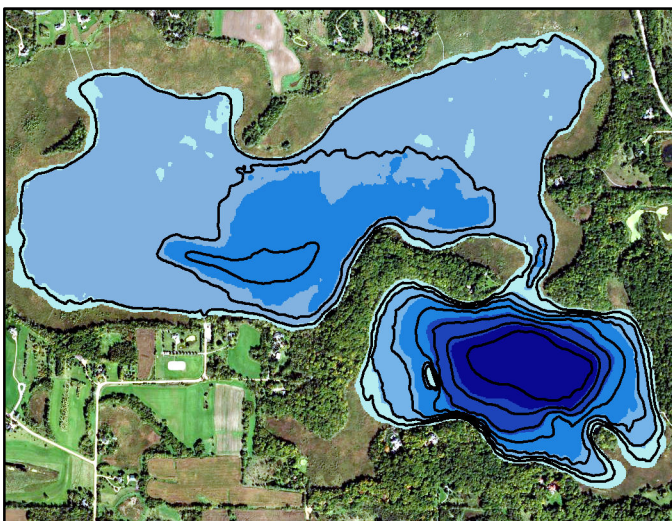
2009: Improvements in watershed

Fall 2010 & spring 2011: alum treatments

Whaletail North Watershed Map



Whaletail North Bathymetry



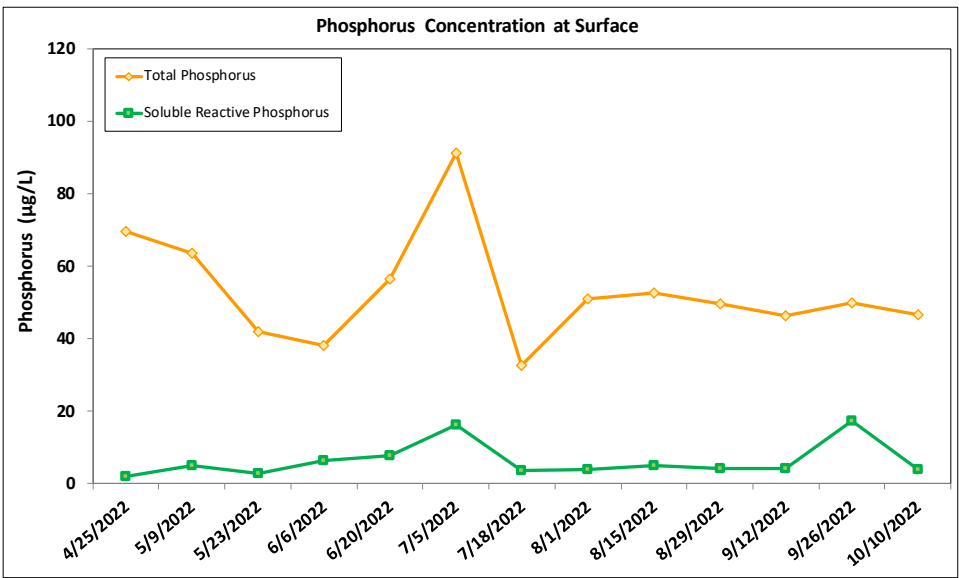
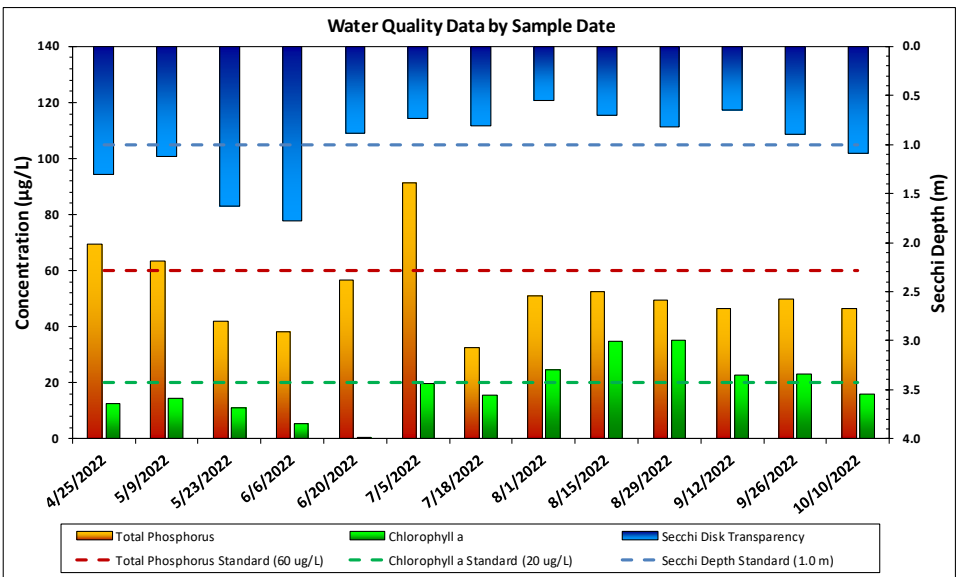
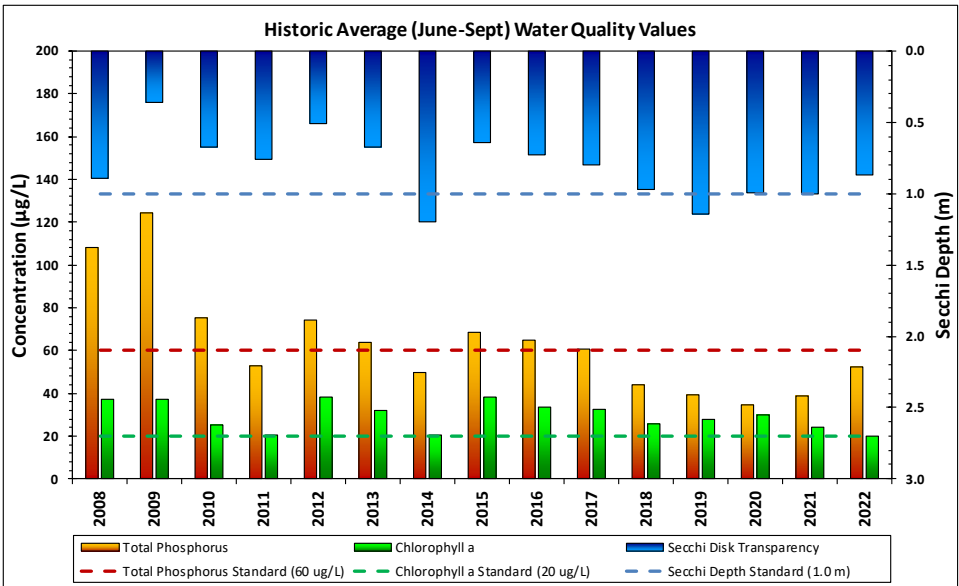
Lake and Watershed Characteristics

DNR #	27018401
Watershed Area	1,585 Acres
Lake Area	370 Acres
Percent Littoral Area	100%
Average Depth	5.2 ft.
Maximum Depth	10.3 ft.
Watershed:Lake Ratio	4.3:1
Impairment Classification	Excess Nutrients in 2008 Shallow Lake

Water Resource Department
 Map Created: 11/24/2017
 Revised Date: 6/4/2021

This map is a compilation of data from various sources and is provided "as is" without warranty of any representation of accuracy, timeliness, or completeness. The user acknowledges and accepts the limitations of the Data, including the fact that the Data is dynamic and in a constant state of maintenance, correction, and update.

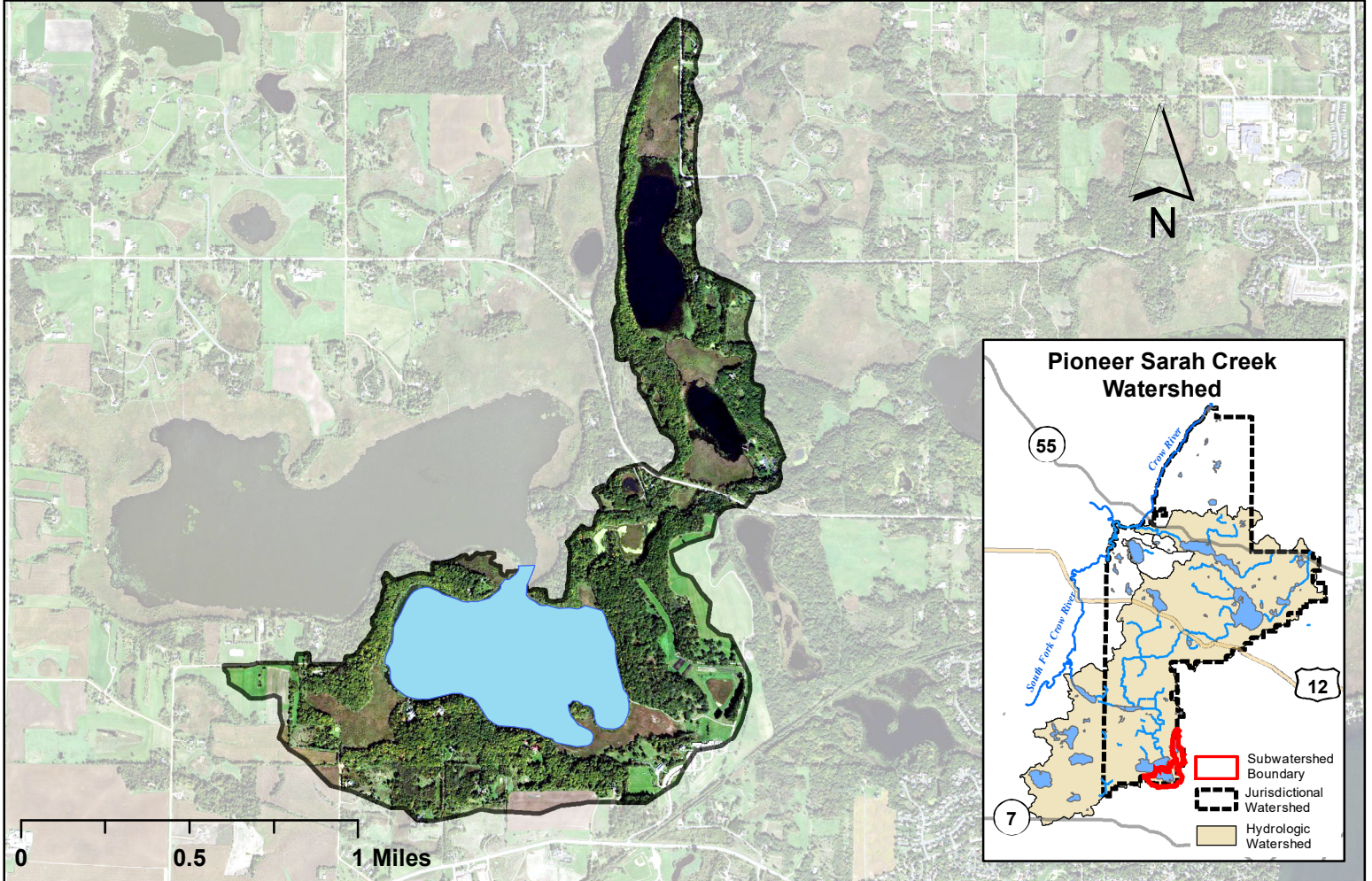




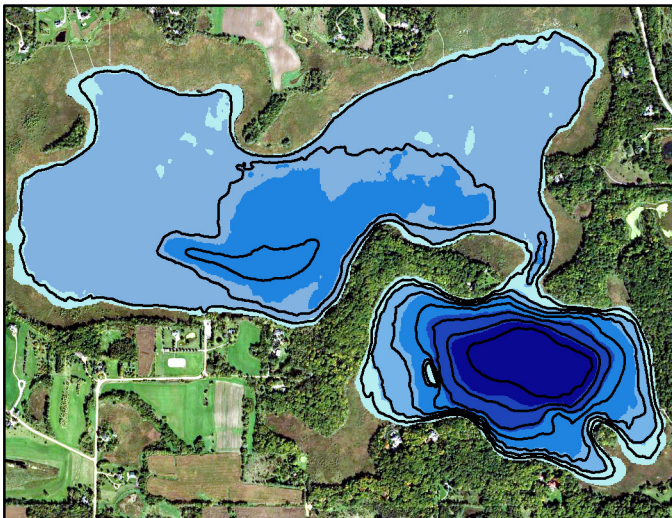
Whaletail North Water Quality Report Card				
Year	TP	Chl-a	Secchi	Avg Grade
2008	D	C	D	D+
2009	D	C	F	D
2010	D	C	F	D
2011	C	C	D	C-
2012	D	C	F	D
2013	C	C	F	D+
2014	C	C	C	C
2015	D	C	F	D
2016	C	C	D	C-
2017	C	C	D	C-
2018	C	C	D	C-
2019	C	C	D	C-
2020	C	C	D	C-
2021	C	C	D	C-
2022	C	B	D	C
MPCA Standard	C	C	D	C-

Met Council Grading System for Lake Water Quality

Whaletail South Watershed Map

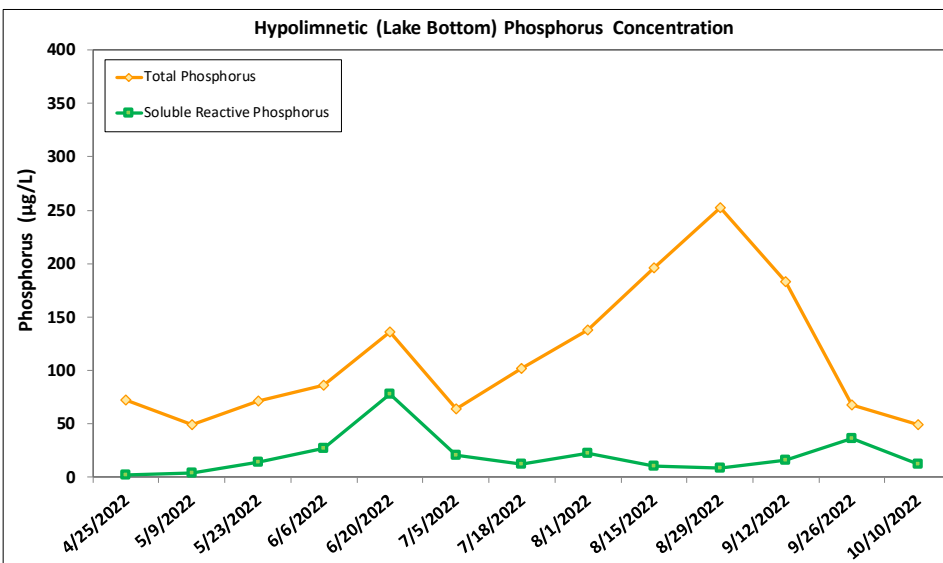
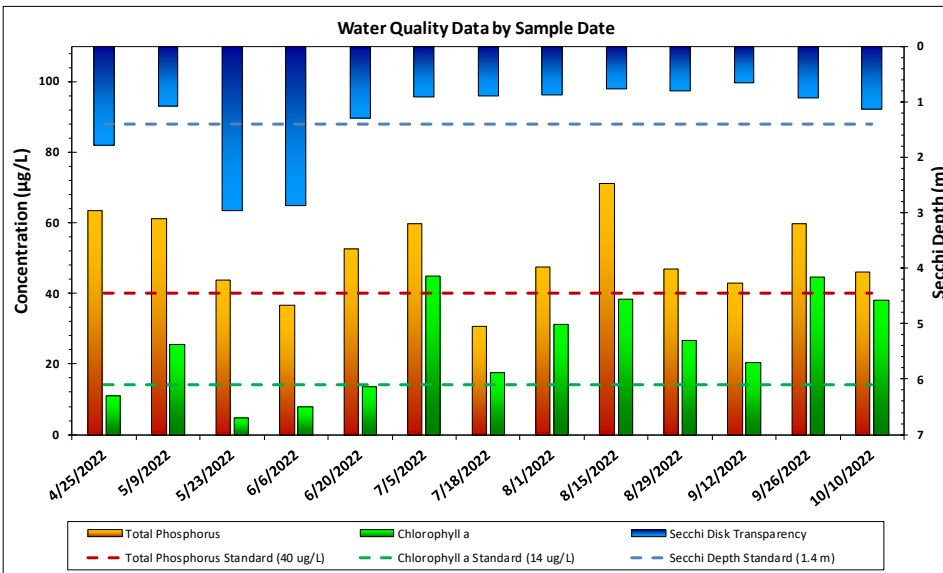
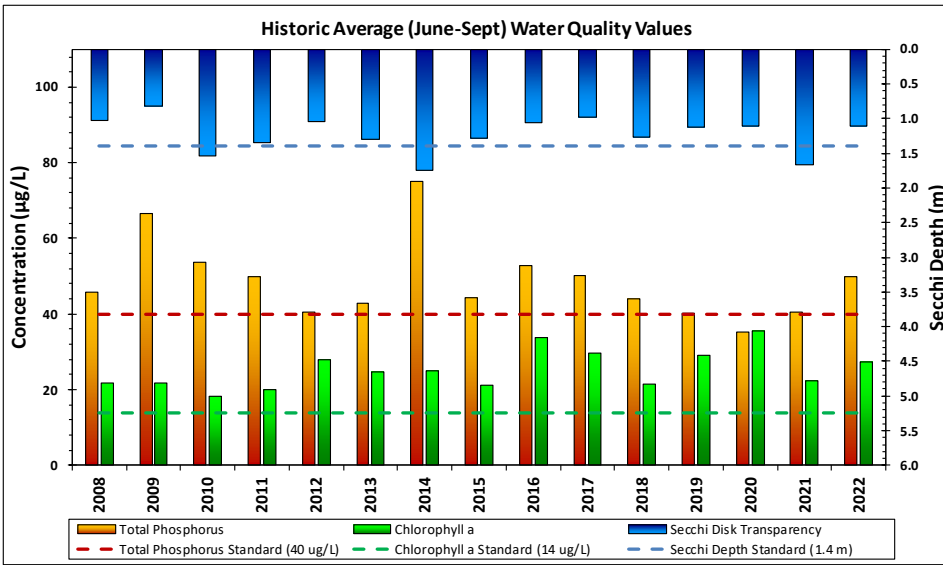


Whaletail South Bathymetry



Lake and Watershed Characteristics

DNR #	27018402
Watershed Area	661 Acres
Lake Area	156 Acres
Percent Littoral Area	66%
Average Depth	12.1 ft.
Maximum Depth	23.3 ft.
Watershed:Lake Ratio	4.2:1
Impairment Classification	Excess Nutrients in 2006 Deep Lake



Whaletail South Water Quality Report Card

Year	TP	Chl-a	Secchi	Avg Grade
2000	D	B	D	C-
2001	C	C	D	C-
2003	C	C	C	C
2005	C	C	D	C-
2007	C	C	C	C
2008	C	C	D	C-
2009	C	C	D	C-
2010	C	B	C	C+
2011	C	C	C	C
2012	C	C	D	C-
2013	C	C	C	C
2014	D	C	C	C-
2015	C	C	C	C
2016	C	C	D	C-
2017	C	C	D	C-
2018	C	C	C	C
2019	C	C	D	C-
2020	C	C	D	C-
2021	C	C	C	C
2022	C	C	D	C-
MPCA Standard	C	B	C	C+

Met Council Grading System for Lake Water Quality