



Cooperative Lakes Monitoring Program

2014 Data Report for Lake Cora, Van Buren County

Michigan Lakes– Ours to Protect

The CLMP is brought to you by:



About this report:

This report is a summary of the data that have been collected through the Cooperative Lakes Monitoring Program. The contents have been customized for your lake. The first page is a summary of the Trophic Status Indicators of your lake (Secchi Disk Transparency, Chlorophyll-a, Spring Total Phosphorus, and Summer Total Phosphorus). Where data are available, they have been summarized for the past field season, the past five years, and since the first year your lake has been enrolled in the program.

If you did not take 8 or more Secchi disk measurements or 4 or more chlorophyll measurements, there will not be summary data calculated for these parameters. This is because missing measurements result in the data not being indicative of overall summer conditions.

If you enrolled in Dissolved Oxygen/Temperature, the summary page will have a graph of one of the profiles taken during the late summer (typically August or September). A late summer graph is used because dissolved oxygen is often depleted in the late summer, and identifying this condition and the depth at which it occurs is typically the most important use of dissolved oxygen measurements.

The back of the summary page will be the results of the Exotic Aquatic Plant Watch or Plant Identification and Mapping, if you participated in that parameter.

The rest of the report will be larger graphs, including all Dissolved Oxygen/Temperature Profiles that you recorded. For Secchi Disk, Chlorophyll, and Phosphorus parameters, you need to have two years of data for a graph to make logical sense. Therefore if this is the first year you have enrolled in the CLMP, you will not receive a graph for these parameters.

To learn more about these parameters or get definitions to unknown terms, check out the CLMP Manual found at: http://www.micorps.net/documents/CLMP_Manual.pdf. [Please note: This is a new publication and a printed version will not be available until April 2015. The printed version will be available at the CLMP training held during the annual MLSA Conference in early May.]

Thank you!

The CLMP Leadership Team would like to thank you for all of your efforts over the past year. The CLMP would not exist without dedicated and hardworking volunteers!

The CLMP Leadership Team is made of: Bill Dimond, Marcy Knoll Wilmes, Jean Roth, Jo Latimore, Paul Steen, Scott Brown, Laura Kaminski, and Anne Sturm.

Questions?

If you have questions on this report or believe that the tabulated data for your lake in this report are in error please contact:

Paul Steen (psteen@hrwc.org), MiCorps Program Manager

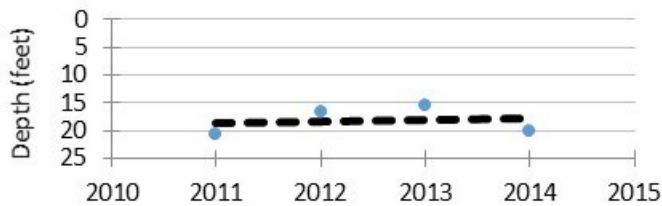
Lake Cora, Van Buren County

2014 CLMP Results



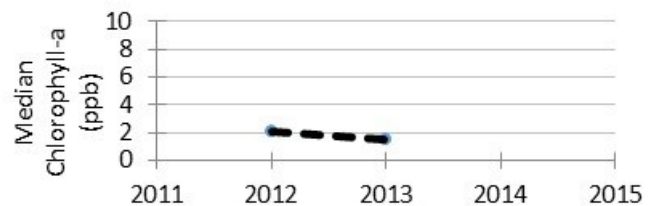
Secchi Disk Transparency (feet)

Year	# Readings	Min	Max	Average	Std. Dev	Carlson TSI
2014	13 z	13.0	27.0			
2011-2013	59	12.0	35.0	17.6	3.6	36
2014 All CLMP Lakes	3050	2.0	50.0	13.1	2.1	41



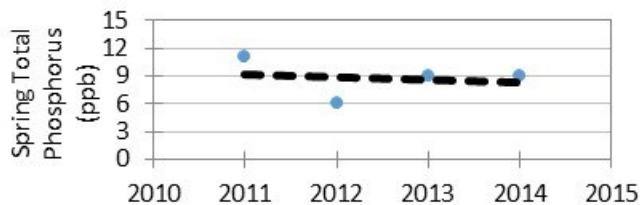
Chlorophyll-a (parts per billion)

Year	# Samples	Min	Max	Median	Std. Dev	Carlson TSI
2014	3	<1.0	3.3			
2012-2013	10	<1.0	2.7	1.8	0.7	36
2014 All CLMP Lakes	583	<1.0	23.5	2.0	2.9	37



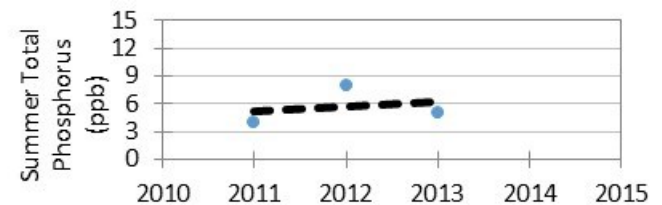
Spring Total Phosphorus (parts per billion)

Year	# Samples	Min	Max	Average	Std. Dev
2014	1	9	9	9.0	NA
2009-2013	3	6	11	8.7	2.5
2014 All CLMP Lakes	164	3 W	77	13.2	11.1

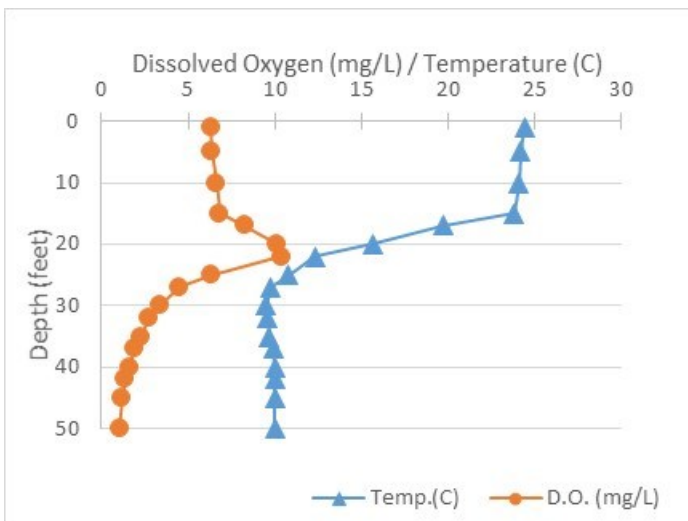


Summer Total Phosphorus (parts per billion)

Year	# Samples	Min	Max	Average	Std. Dev	Carlson TSI
2014	*					
2011-2013	3	<5 T	8	5.7	2.1	29
2014 All CLMP Lakes	180	4 T	62	13.5	7.9	41



July Dissolved Oxygen and Water Temperature Profile



Summary

Average TSI	2014	2011-2013	1974-2010
Cora	NA	34	NA
All CLMP Lakes	40	NA	NA

The Lake Cora volunteer was unable to complete the summer sampling and as a result the average trophic status index cannot be computed for 2014. The lake has an average TSI of 34 according to past data, which classified Lake Cora as oligotrophic. The lake keeps some dissolved oxygen in the bottom waters through early summer, but by mid-summer the bottom water is low in oxygen. It would be beneficial to see what happens in August and September next year.

There is too little data to assess long term trends. CLMP recommends eight years of consistent monitoring in order to develop a strong data baseline.

*= No sample received W= Value is less than the detection limit (<3 ppb) T= Value reported is less than the reporting limit (5 ppb). Result is estimated.

<1 = Chlorophyll-a: Sample value is less than limit of quantification (<1 ppb). Z = No mid-August through September readings; summary results may not be comparable to past data.

Lake Cora, Van Buren County

2014 Exotic Aquatic Plant Watch Results



The Exotic Aquatic Plant Watch was conducted on Lake Cora in 2014.

This survey involves sampling at multiple locations around the lake to detect new invaders, and document the extent of known invaders. While notes on other plant species may be recorded during the survey, the effort focuses on four highly invasive species: Eurasian watermilfoil (*Myriophyllum spicatum*), starry stonewort (*Nitellopsis obtusa*), curly-leaf pondweed (*Potamogeton crispus*), and Hydrilla (*Hydrilla verticillata*).

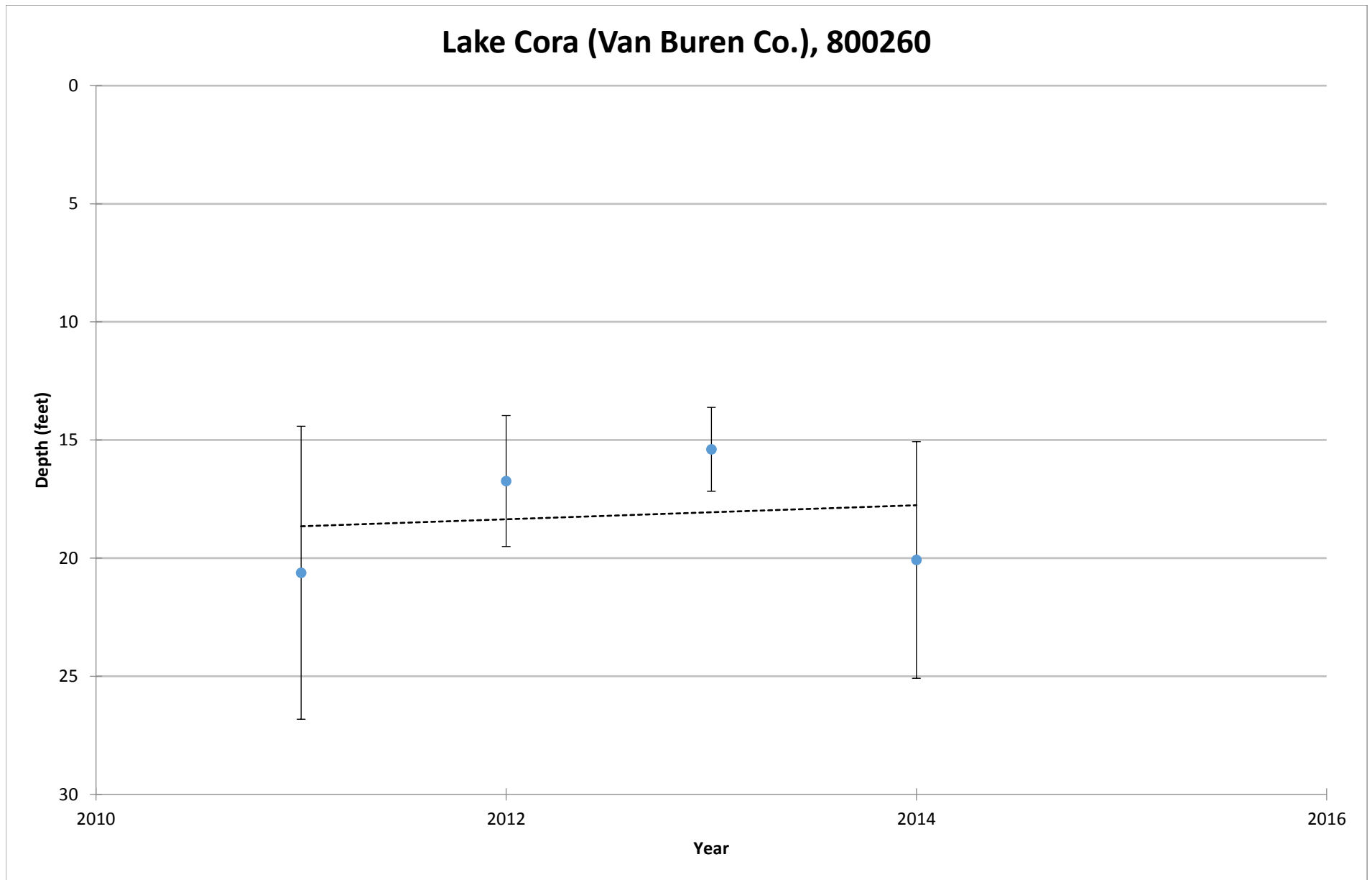
The table below summarizes the results of the 2014 Exotic Aquatic Plant Watch on Lake Cora.

Lake Cora, Van Buren County		
2014 Exotic Aquatic Plant Watch Results		
Survey Date: June 25, 2014		
<u>Species</u>	<u>Status</u>	<u>Comments</u>
Eurasian watermilfoil	FOUND	Survey conducted alongside DEQ underwater surveyors
Starry stonewort	Not found	
Curly-leaf pondweed	Not found	
Hydrilla	Not found	

Visit the MiCorps Data Exchange (www.micorps.net) or contact the lead volunteer on your lake for more details on the survey, including sampling locations, maps, and abundance information, and for information on past surveys.

COOPERATIVE LAKES MONITORING PROGRAM
SUMMER MEAN TRANSPARENCY

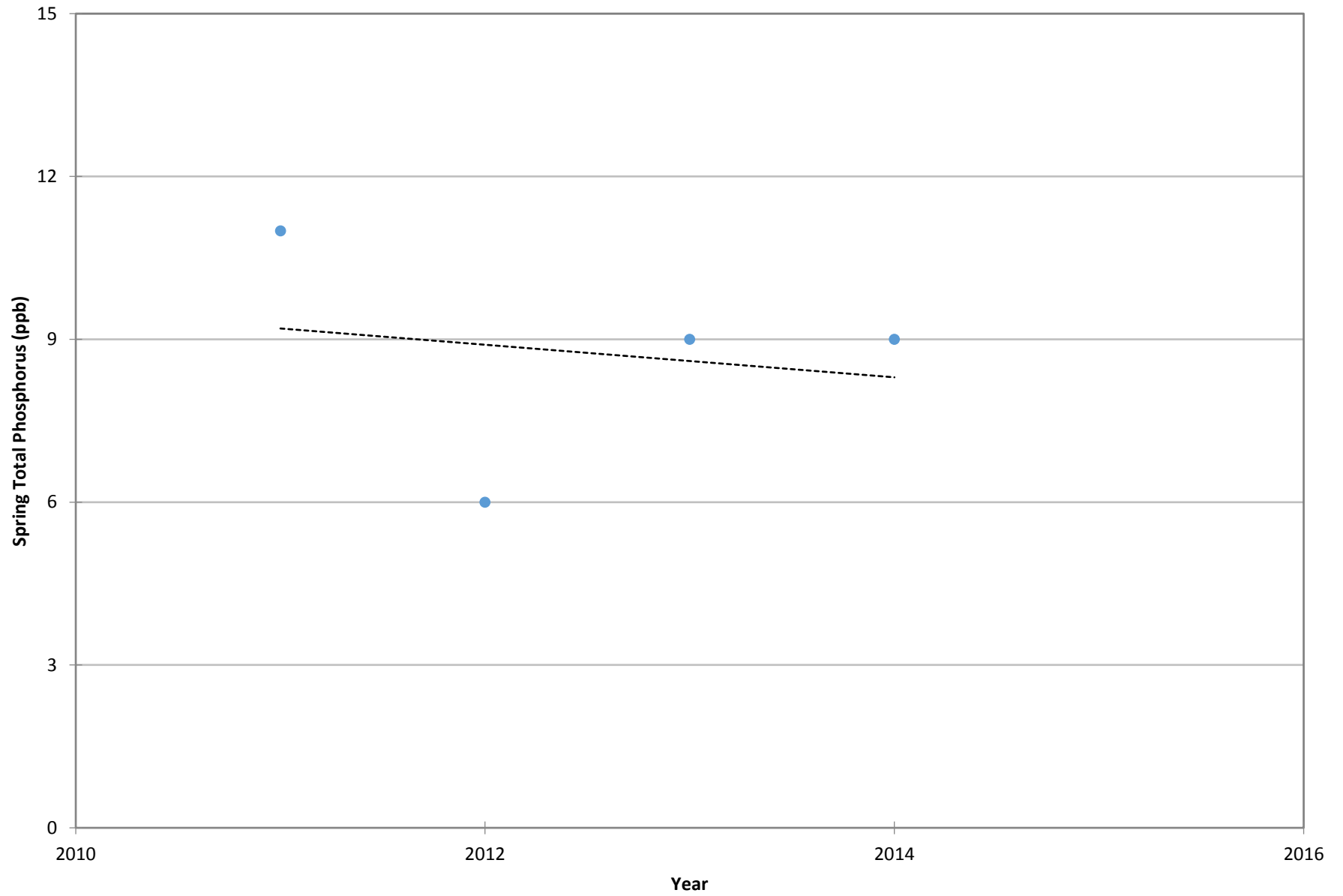
Lake Cora (Van Buren Co.), 800260



Vertical bars indicate standard deviation

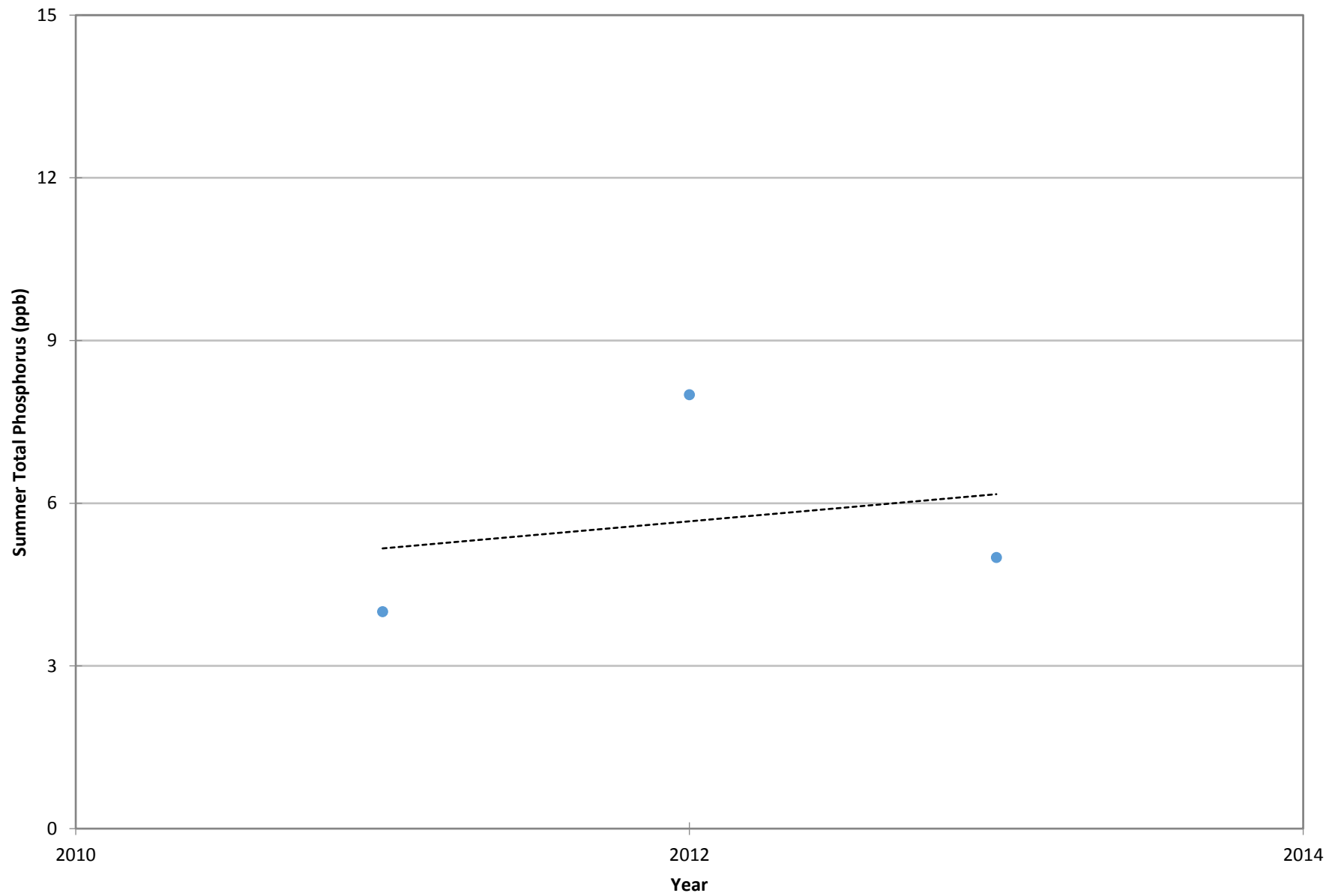
COOPERATIVE LAKES MONITORING PROGRAM
SPRING TOTAL PHOSPHORUS

Lake Cora (Van Buren Co.), 800260



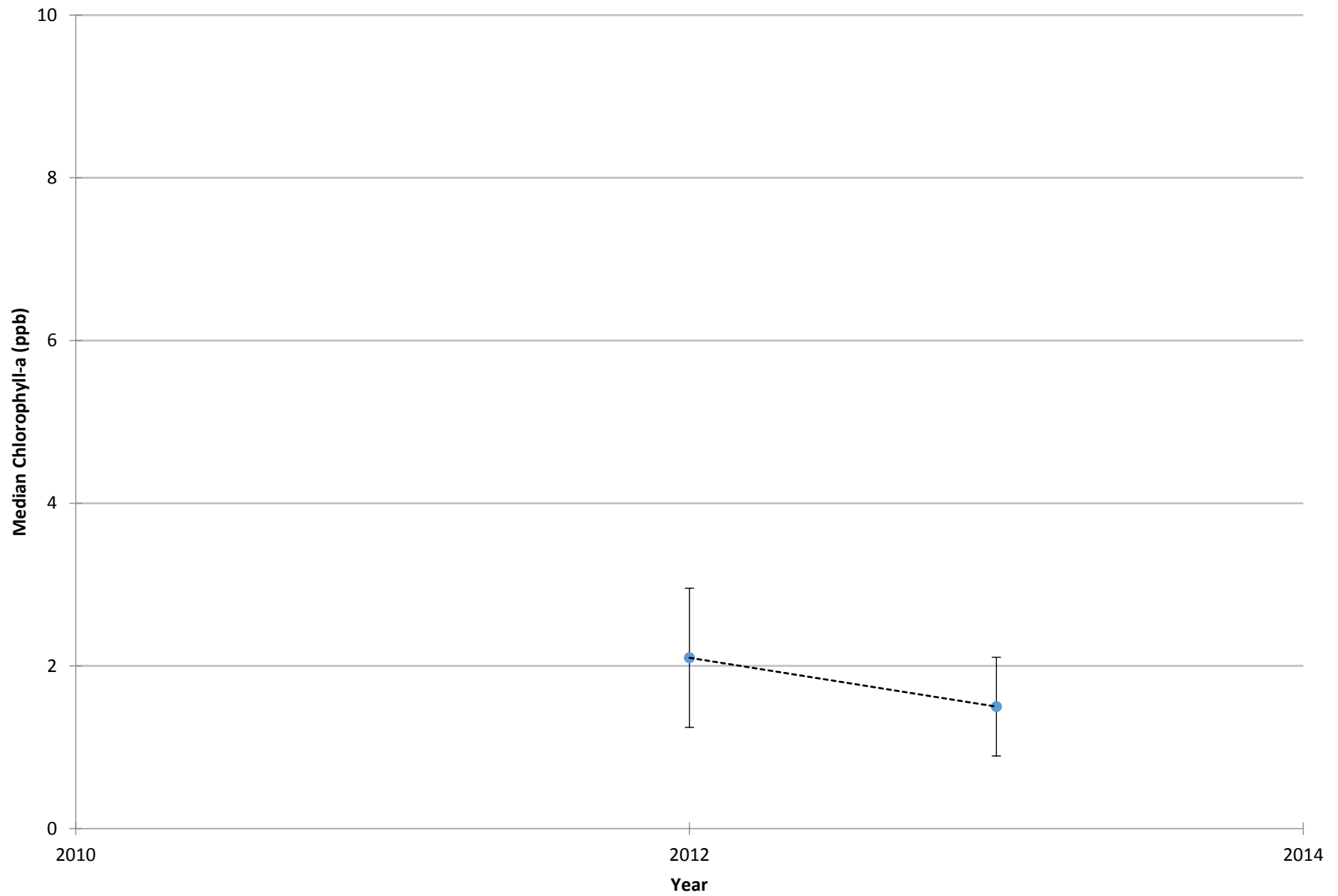
COOPERATIVE LAKES MONITORING PROGRAM
SUMMER TOTAL PHOSPHORUS

Lake Cora (Van Buren Co.), 800260



COOPERATIVE LAKES MONITORING PROGRAM
SUMMER MEDIAN CHLOROPHYLL-A

Lake Cora (Van Buren Co.), 800260



Vertical bars indicate standard deviation

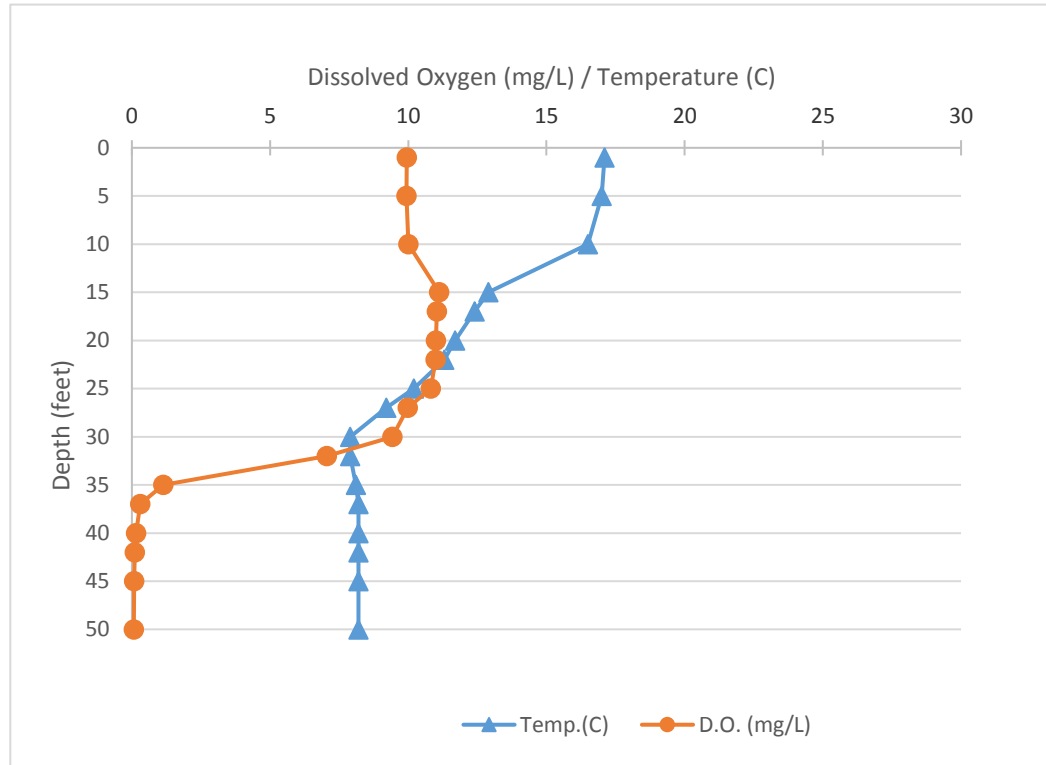
Name: Cora
 County: Van Buren
 Site ID: 800260
 Date: 5/11/2014

Dissolved Oxygen and Temperature Profile

Depth (ft)	Temp.(C)	D.O. (mg/L)
1	17.1	9.95
5	17	9.93
10	16.5	10
15	12.9	11.12
17	12.4	11.04
20	11.7	11
22	11.3	10.99
25	10.2	10.82
27	9.2	9.98
30	7.9	9.42
32	7.9	7.05
35	8.1	1.14
37	8.2	0.3
40	8.2	0.15
42	8.2	0.1
45	8.2	0.08
50	8.2	0.07
55	8.1	0.06
60	8.1	0.06

Lake: Cora (Van Buren Co.)

5/11/2014



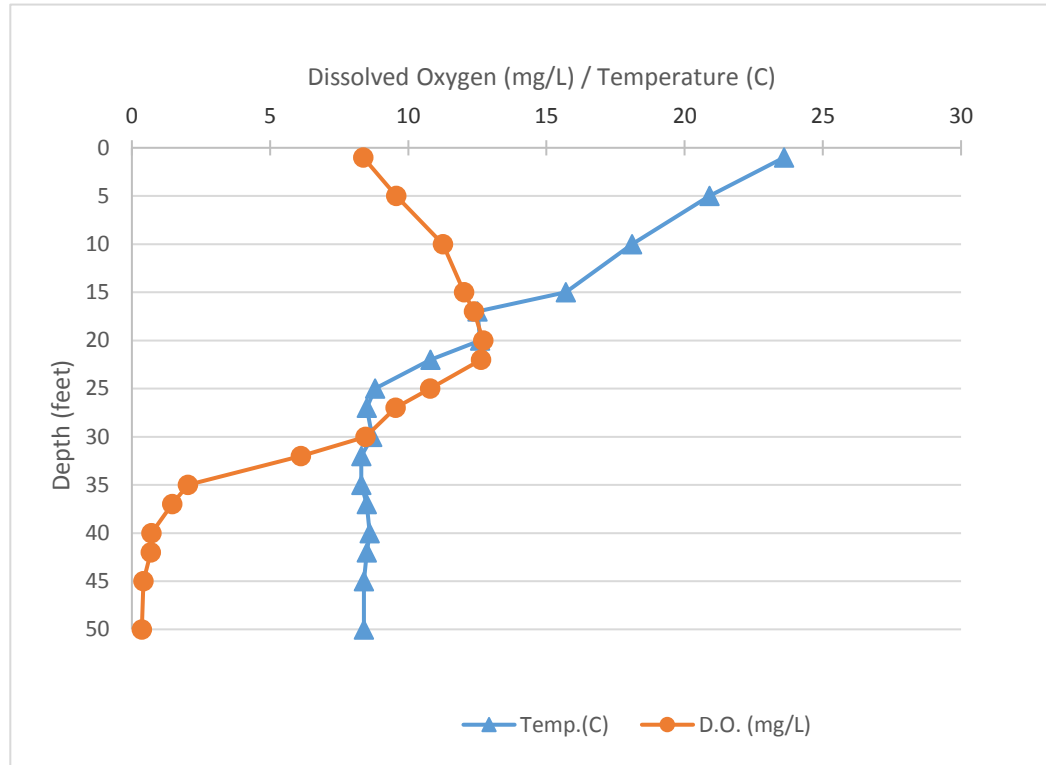
Name: Cora
 County: Van Buren
 Site ID: 800260
 Date: 5/30/2014

Dissolved Oxygen and Temperature Profile

Depth (ft)	Temp.(C)	D.O. (mg/L)
1	23.6	8.37
5	20.9	9.57
10	18.1	11.25
15	15.7	12.02
17	12.5	12.38
20	12.6	12.71
22	10.8	12.63
25	8.8	10.79
27	8.5	9.54
30	8.7	8.45
32	8.3	6.11
35	8.3	2.03
37	8.5	1.46
40	8.6	0.71
42	8.5	0.69
45	8.4	0.42
50	8.4	0.36
55	8.4	0.23
60	8.4	0.17

Lake: Cora (Van Buren Co.)

5/30/2014



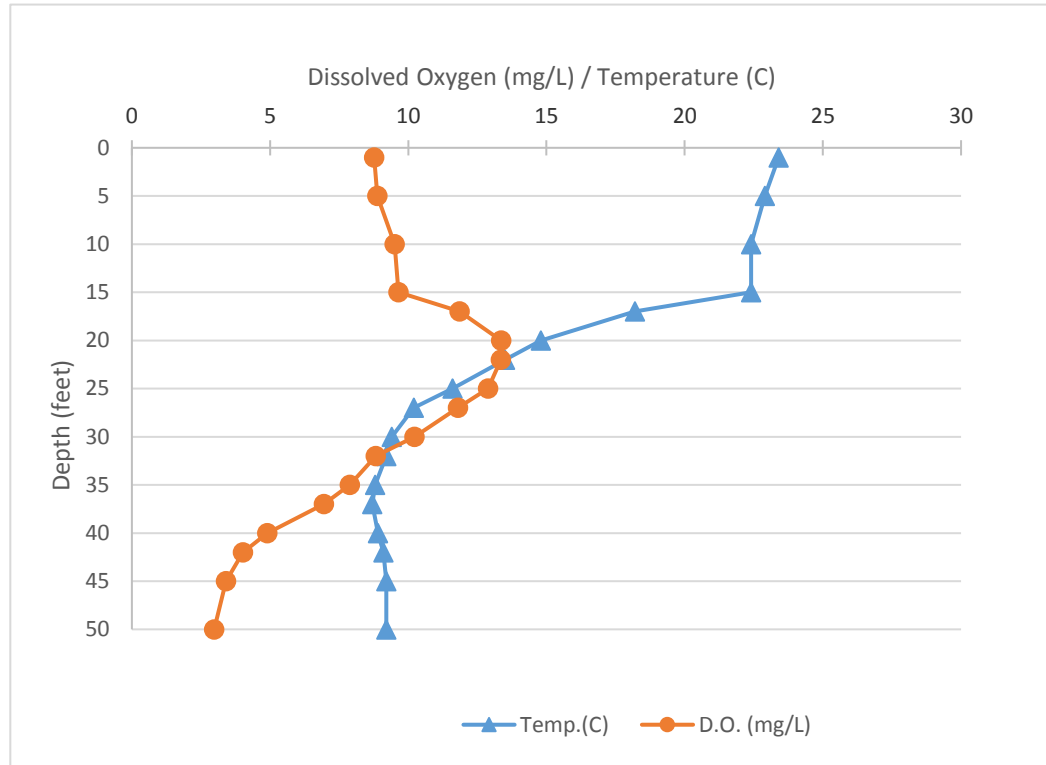
Name: Cora
 County: Van Buren
 Site ID: 800260
 Date: 6/14/2014

Dissolved Oxygen and Temperature Profile

Depth (ft)	Temp.(C)	D.O. (mg/L)
1	23.4	8.77
5	22.9	8.88
10	22.4	9.51
15	22.4	9.64
17	18.2	11.86
20	14.8	13.36
22	13.5	13.35
25	11.6	12.89
27	10.2	11.8
30	9.4	10.22
32	9.2	8.82
35	8.8	7.88
37	8.7	6.95
40	8.9	4.9
42	9.1	4.02
45	9.2	3.4
50	9.2	2.98
55	9.2	2.6
60	9.2	2.33

Lake: Cora (Van Buren Co.)

6/14/2014



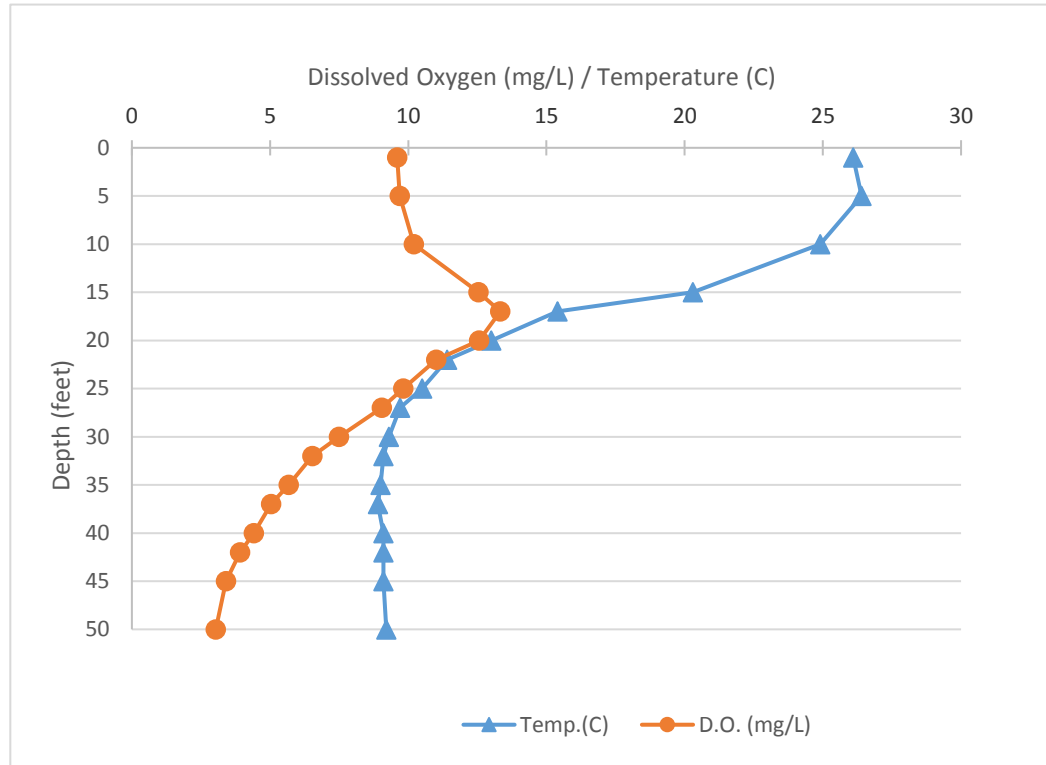
Name: Cora
County: Van Buren
Site ID: 800260
Date: 7/1/2014

Dissolved Oxygen and Temperature Profile

Depth (ft)	Temp.(C)	D.O. (mg/L)
1	26.1	9.6
5	26.4	9.69
10	24.9	10.2
15	20.3	12.54
17	15.4	13.33
20	13	12.56
22	11.4	11.01
25	10.5	9.82
27	9.7	9.04
30	9.3	7.49
32	9.1	6.53
35	9	5.68
37	8.9	5.04
40	9.1	4.41
42	9.1	3.92
45	9.1	3.41
50	9.2	3.04
55	9.2	2.68
60	9.2	2.44

Lake: Cora (Van Buren Co.)

7/1/2014



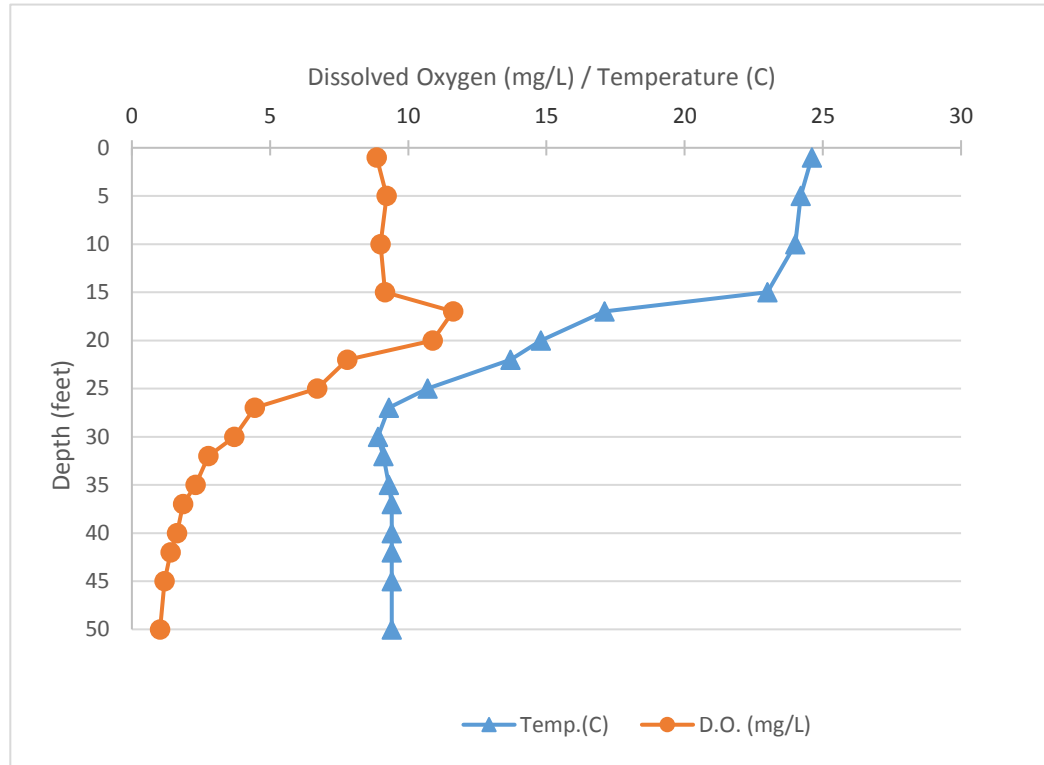
Name: Cora
County: Van Buren
Site ID: 800260
Date: 7/18/2014

Dissolved Oxygen and Temperature Profile

Depth (ft)	Temp.(C)	D.O. (mg/L)
1	24.6	8.86
5	24.2	9.22
10	24	9
15	23	9.16
17	17.1	11.62
20	14.8	10.88
22	13.7	7.79
25	10.7	6.71
27	9.3	4.45
30	8.9	3.71
32	9.1	2.77
35	9.3	2.31
37	9.4	1.85
40	9.4	1.63
42	9.4	1.4
45	9.4	1.18
50	9.4	1.02
55	9.3	0.97
60	9.3	0.76

Lake: Cora (Van Buren Co.)

7/18/2014



Name: Cora
County: Van Buren
Site ID: 800260
Date: 7/31/2014

Dissolved Oxygen and Temperature Profile

Depth (ft)	Temp.(C)	D.O. (mg/L)
1	24.4	6.32
5	24.2	6.38
10	24.1	6.64
15	23.8	6.84
17	19.7	8.26
20	15.7	10.1
22	12.3	10.36
25	10.8	6.33
27	9.8	4.51
30	9.5	3.36
32	9.6	2.75
35	9.7	2.26
37	9.9	1.94
40	10	1.6
42	10	1.38
45	10	1.21
50	10	1.05
55	10	0.91
60	10	0.78

Lake: Cora (Van Buren Co.)

7/31/2014

