



WATER WATCH

Making time for monitoring

2009 Project Update #2

Greetings citizen monitors,

The 2009 sampling season for Dakota Water Watch has come to a close and the totals are in. This year we had 61 monitors who sampled an even 100 sites and three additional volunteers manning our mini-labs. This update gives a brief overview of all the data collected in 2009. As was done last year, we will be sending out a comprehensive booklet to all active volunteers that will include a complete table of collected data, information specific to each lake, an explanation of how the data can be used, and why certain parameters are important.

Table 1 shows average Secchi depth measurements by month as well as a seasonal average for each lake. When there was more than one measurement at a site in a month, the average Secchi depth value was calculated. For lakes with multiple monitoring locations, the monthly average values for each site were averaged to determine the Secchi depth value for the lake as a whole. The “+” indicates that one or more of the measurements taken for that lake during that month were greater than the total depth at the particular sampling location.

Table 1. Average Secchi Depths for Each Water Body by Month.

Monthly Averages by Lake (meters)								
	April	May	June	July	August	September	October	Seasonal Average
Andes	---	0.33	---	0.40+	0.15	0.14	0.43	0.29+
Brant	---	0.91	0.92	0.93	1.22+	1.46+	---	1.09+
Campbell	---	---	0.28	0.18	0.16	0.25	---	0.22
Diamond	---	---	---	0.28	---	---	---	0.28
Hendricks	---	---	---	---	---	---	1.60	1.60
Herman	0.82+	0.31	0.66	0.57	0.68+	0.54	---	0.59+
Kampeska	---	1.10	0.60	0.90	0.95+	0.70	---	0.85+
Long	---	0.30	0.28	0.30	0.18	0.22	0.27	0.26
Madison	0.92+	0.95+	1.01+	0.85	0.80+	0.59	1.55+	0.95+
McCook	0.49	0.79	1.08	0.32	0.57	0.50	0.62	0.62
Oakwood Lakes	---	0.52+	0.64+	0.55+	0.45+	0.26	0.38	0.46+
Lake Pocasse	---	---	---	---	---	---	---	---
Lake Poinsett	---	---	---	1.10+	1.20+	1.30+	1.35+	1.24+
Round Lake	---	---	0.23	---	0.15	1.30+	1.40+	0.77+
Thompson	---	---	---	---	---	0.54	0.52+	0.53+
Timber Lake	---	---	---	---	0.09	---	---	0.09

Lake Hendricks had the highest Secchi depth average for the year. However, this was based on only one measurement. Lake Poinsett had the best Secchi depth at more than 1.24 meters based on measurements from multiple months. Timber Lake had the poorest Secchi depth average, although, this too was only based on one measurement. Lake Campbell, along with Diamond and Long Lakes, all had Secchi measurements that averaged below 30 cm.

Table 2 lists the average *E. coli* bacteria counts in colony forming units per 100 mL (cfu/100mL) for each lake, each month. As with the Secchi measurements, when there were multiple sampling locations within a lake, those values were averaged to determine a monthly average for that lake. The “river sites” row consists of data from Split Rock Creek, West Pipestone Creek, Deer Creek, and an unnamed pond near Garretson in Minnehaha County.

Table 2. Average *E. coli* Bacteria Counts for Each Water Body by Month.

Average <i>E. coli</i> Bacteria by Month by Lake (colony forming units/100mL)							
	April	May	June	July	August	September	October
River Sites	69	62	175	188	346	111	276
Andes	---	8	---	0	0	0	20
Brant	---	0	15	1	4	---	---
Campbell	---	---	129	42	27	40	---
Diamond	---	---	---	4	---	---	---
Hendricks	---	---	---	---	---	---	2
Herman	0	80	232	83	84	75	---
Kampeska	---	0	0	0	0	---	---
Long	---	---	---	---	---	---	---
Madison	---	20	27	47	0	0	---
McCook	16	9	20	196	29	17	6
Oakwood Lakes	0	3	30	8	1	1	0
Lake Pocasse	---	---	---	---	---	---	---
Lake Poinsett	---	---	---	93	17	4	4
Round Lake	---	---	---	---	---	---	---
Thompson	---	---	---	---	---	50	25
Timber Lake	---	---	---	---	---	---	---

River sites typically prove to have higher *E. coli* counts than lake sites, which is true with our data in 2009. The highest monthly average for *E. coli* in a lake came from Lake Herman in June. Many lakes had monthly averages that were less than 30 cfu/100mL.

In 2009, 432 bacteria samples were collected and processed (241 more than in 2008). Of those, over 50% were “no detections” (Figure 1). A total of nine samples (2%) contained more than 235 cfu/100mL which exceeds the EPA standard for intense recreational use (≤ 235 cfu/100mL).

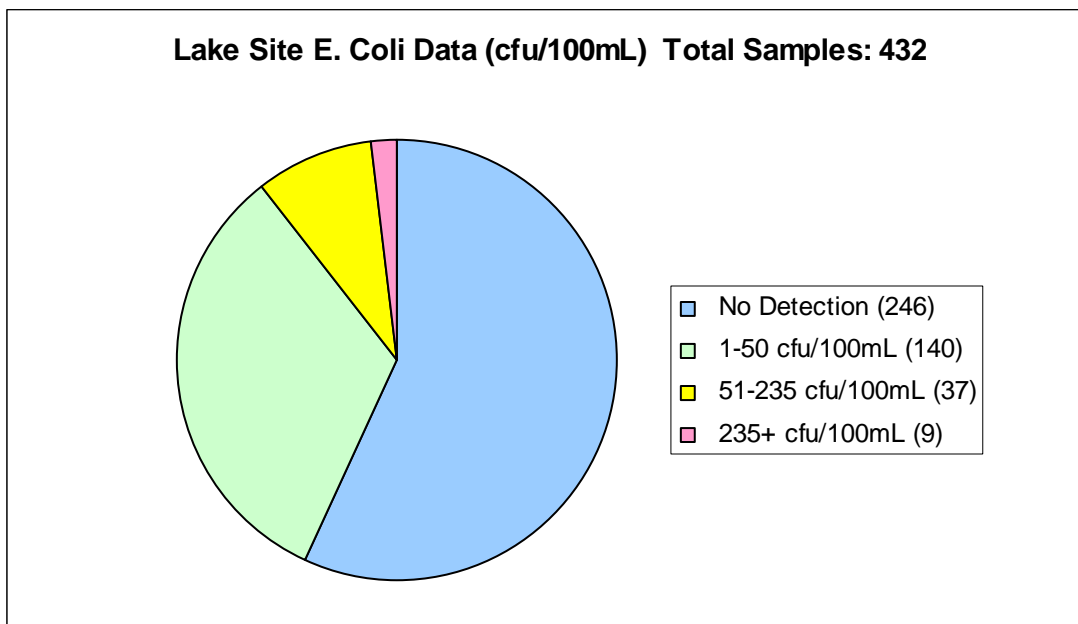


Figure 1. *E. coli* Samples Grouped by Number of Colony Forming Units from Monitored Lakes.

Further Information

Reimbursement Requests

If anyone has reimbursement requests for travel and shipping costs that they have not turned in please do as soon as possible so we can get that taken care of.

South Dakota *E. coli* Standard

The State of South Dakota has formally adopted an *E. coli* standard for immersion recreation waters. As of August 2009, a water body is considered to be in impaired if the geometric mean of a minimum of at least 5 samples taken within a 30-day period (during separate 24 hour periods) is greater than or equal to 126 cfu/100mL. The maximum for any one sample is ≤ 235 cfu/100mL, which is the same as the EPA recommended standard for intensive recreational use. There is also a standard for limited contact recreation waters (fishing, boating, etc.) That limit is ≤ 630 cfu/100mL as a geometric mean, with rules identical to those imposed for immersion recreation, and ≤ 1178 cfu/100mL for any one sample. These numbers apply from May 1 through September 30. Dakota Water Watch will keep a close eye on water bodies that have samples that approach this limit and may encourage additional sampling if necessary.

Big Sioux Water Festival

As citizens with an interest in our state's water resources, the steering committee of the Big Sioux Water Festival would like to extend an invitation to any of you interested in volunteering to help with this annual event. The festival will be held on Tuesday, May 11, 2010 on the campus of South Dakota State University in Brookings. For those of you not familiar with this event, it's the largest one-day water festival for 4th graders in the state and runs solely on donations and volunteers. Schools from a 10-county area are invited each year. As of this time, there are 32 schools and 1,053 kids registered to attend the 2010 festival. Volunteers are always needed to help with setup, present 20 minute activities, guide classes, share new ideas, etc. If this is something you would like to volunteer for, please contact the East Dakota Water Development District (605-688-6608 or edwdd4@brookings.net). Please also see the festival website www.bigsiouxwaterfestival.org.

Finally...

Don't forget that if you would like us to come and present the 2009 results from Dakota Water Watch at your lake association meeting, to let us know so we can make the appropriate preparations.

Thank you very much for helping to make the 2009 sampling season a success. We hope that you will all return and help out Dakota Water Watch next year!

Deb Springman & Jeremy Hinke
East Dakota Water Development District
132B Airport Drive
Brookings, SD 57006
(605)688-6741 edwdd3@brookings.net



Leelan Larson, Monitor, Oakwood Lakes