

Dip-In to the History of the Self-Help Lake Monitoring Program 30 Years and Counting!



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Wisconsin Department of Natural Resources

Wisconsin Lakes Partnership Convention March 31, 2016



In a barn, at a
playground ...
or at a State Park...



Little Green Lake



Kemp Biological Station
Tomahawk Lake

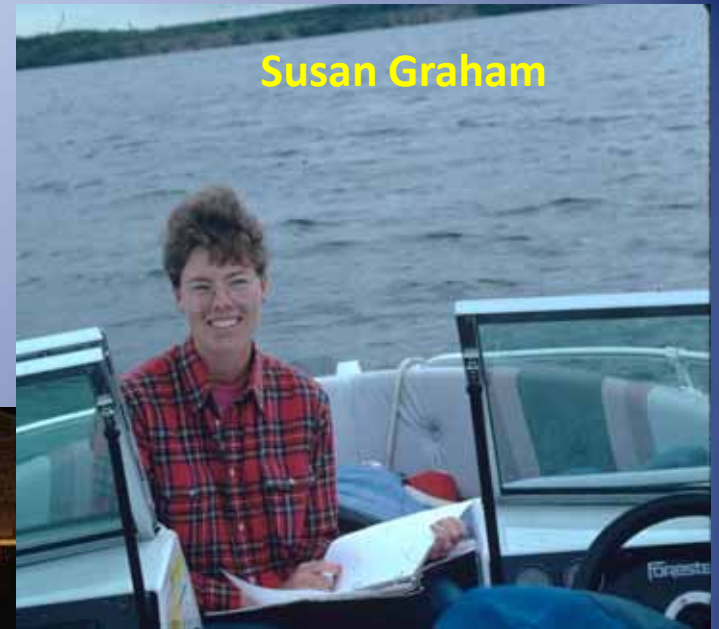


...we were there
to get you involved!





Paul Anderson



Susan Graham

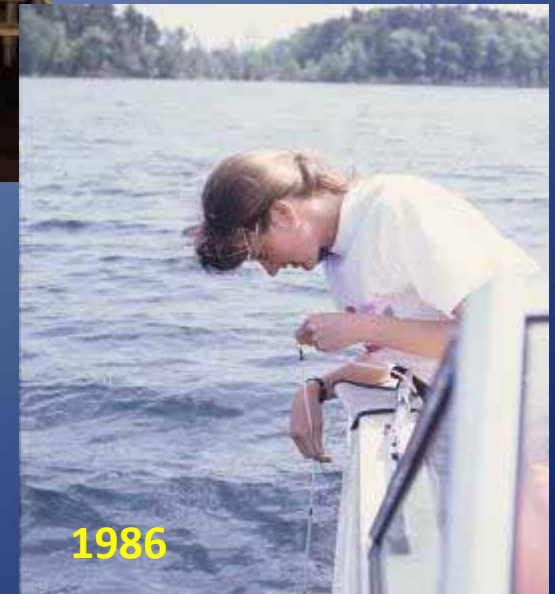


Carolyn, Ken Schreiber and Brad Wolbert



Carolyn Betz

1991

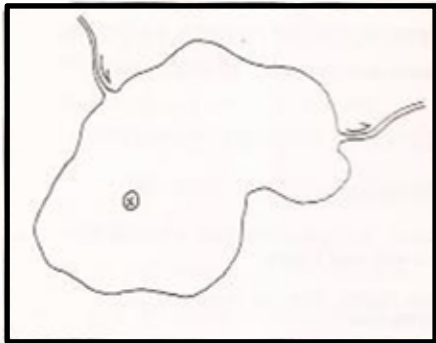


1986

In 1986, 126 volunteers monitored 113 lakes using a Secchi disk. The rest is history....



How to Use the Secchi Disc



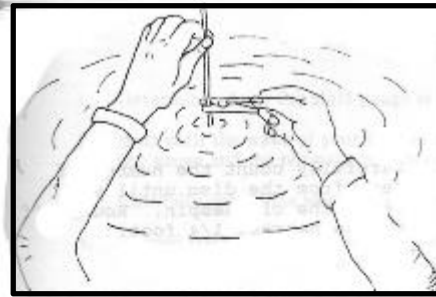
1. Use the map of your lake and its marked sampling site and proceed to the site.



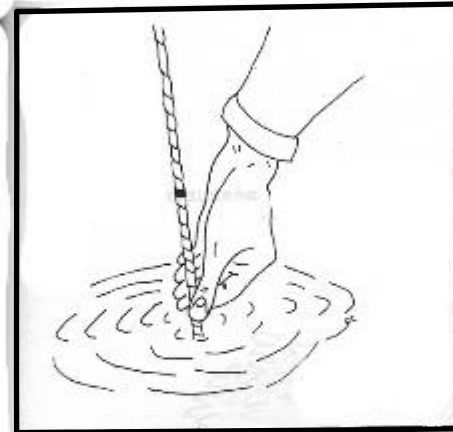
2. Anchor the boat at the sampling site. Remove your sunglasses. Unwind the Secchi disc rope from the reel.



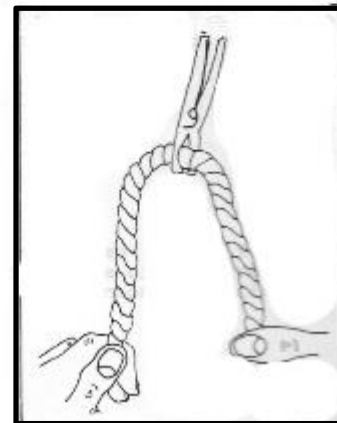
3. Lean over the shady side of the boat and slowly lower the disc into the water until it can no longer be seen.



4. Mark the rope at the water level with the clothespin.



5. Lower the disc a few more feet into the water. Slowly raise the disc. When the disc reappears, mark the rope at the water level with your fingers.



6. Form a loop between the clothespin and your fingers. Slide the clothespin to the center of the loop. Haul the disc back into the boat.



7. Carefully count the number of feet from the disc until you reach the clothespin. Round off to the nearest ¼ foot.

Your Name: Joe Volunteer
 Lake Name and County: Clear Lake, Fishing Co.
 Lake ID Number: 1504061
 Sample Date: 5/17 Sample Time: 2:30 pm
 SECCHI DISC TRANSPARENCY: (Record to nearest 1/4 foot)
 Depth: 12' Did it hit bottom? Yes (X)
 LAKE LEVEL: 1.43
 WATER COLOR: (Circle one)
 (Clear/Bl.) Green Brown
 OTHER COMMENTS:

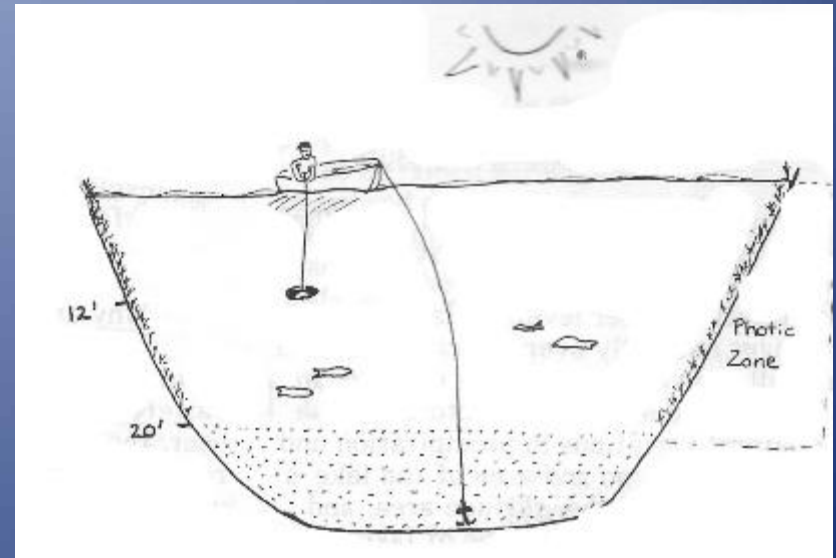
8. Record the measurement on the data sheet.

9. If you are monitoring more than one site or lake, proceed to the next location and repeat steps 1-9.

Joe Volunteer
 Clear Lake Rd.
 Fish, WI 50410

Sarahyn Robery
 Department of Natural Resources
 P.O. Box 7921, WNR/2
 Lake Management Program
 Neilsen, WI 53707-7921

Light can penetrate to a depth of 1.7 times the Secchi depth. Here the Secchi disc can be seen to a depth of 12 feet. Light can actually penetrate to 20 feet.



Wisconsin Self-Help Lake Monitoring Program Data Summary for 1986



Wisconsin Department of Natural Resources

November 1987

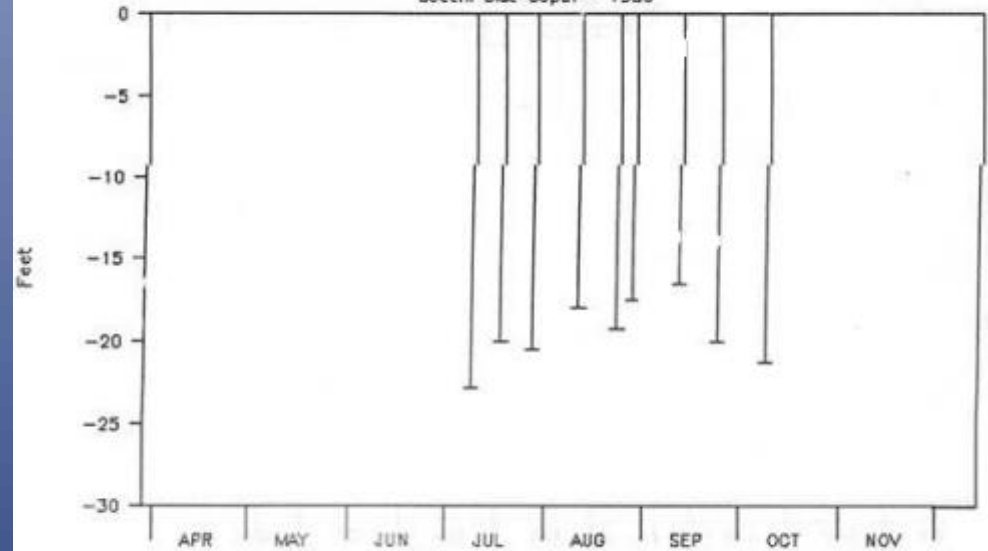
Lake Name: Sand Lake
County: Burnett
Aerialphoto ID: D1P5100
Sampling Site: Deep Hole

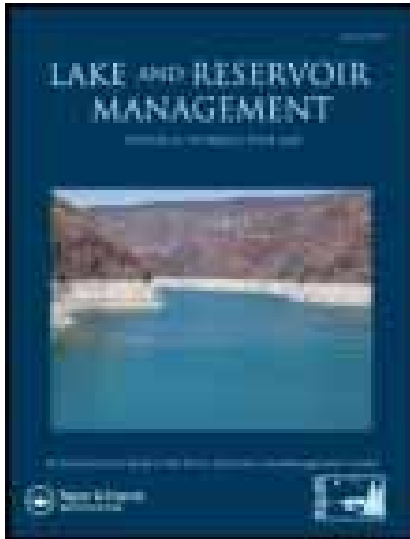


Name	Date	Time	Secchi		Hit	Bottom Color	Comments
			Depth	Unit			
Ed Schnalth	09-Jul-86	10:30	22.75	Feet	No	Lt. green	
Ed Schnalth	18-Jul-86	10:15	20	Feet	No	Green	Lake getting greener as air temp. goes up
Ed Schnalth	28-Jul-86	11:00	20.5	Feet	No	Green	Water temp rising-water becoming darker green
Ed Schnalth	11-Aug-86	1:45	18	Feet	No	Green	1.75" rain in short time on 9 aug.
Ed Schnalth	23-Aug-86	1:00	19.25	Feet	No	Lt. green	Lake getting clearer; water temp. cooling
Ed Schnalth	28-Aug-86	11:50	17.5	Feet	No	Lt. brown	Lake is starting to turn-over; light frost last night
Ed Schnalth	12-Sep-86	11:30	16.5	Feet	No	Lt. brown	Lake turning over
Ed Schnalth	24-Sep-86	9:30	20	Feet	No	Lt. brown	
Ed Schnalth	30-Sep-86	11:45	23+	Feet	No	Clear	Rope not long enough
Ed Schnalth	09-Oct-86	3:00	21.25	Feet	No	Lt.Green	High wind night before may have affected water clarity

Sand Lake--Burnett County

Secchi Disc Depth - 1986





Original Articles

Wisconsin's Self-Help Lake Monitoring Program: A Review of the First Year — 1986

[PDF](#)

Lake and Reservoir Management [Volume 4, Issue 1](#), 1988

[Carolyn Rumery^a](#) & [James G. Vennie^a](#)

pages 81-86

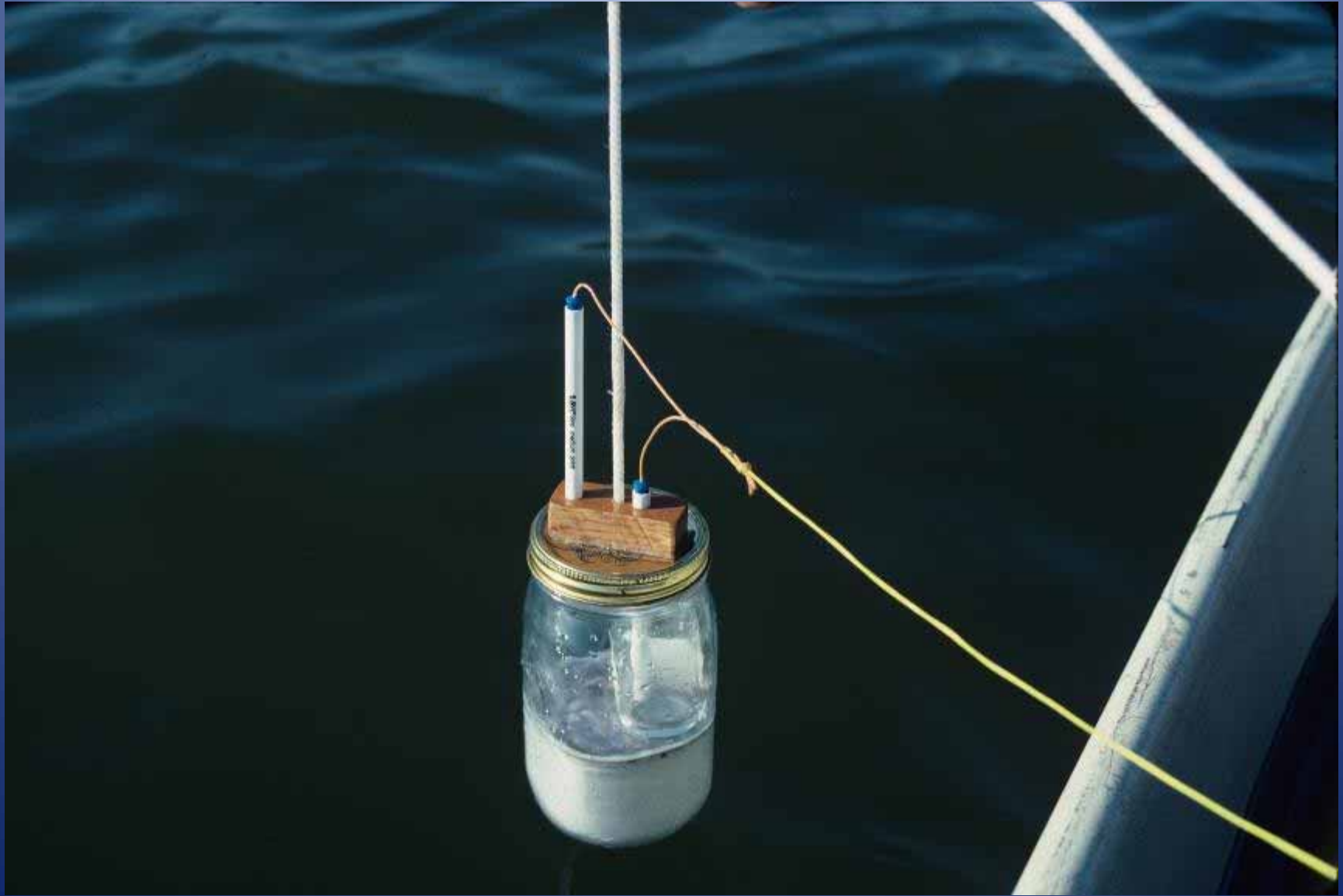
ABSTRACT

The year 1986 marked the first year of the Wisconsin Department of Natural Resources' (WDNR) "Self-Help Lake Monitoring Program." More than 150 volunteers collected Secchi disk and lake level data on 129 lakes and lake basins throughout the state. The program served both as an educational and data collection function and continues to be a cornerstone of the state's new Lake Management Program.

The Self-Help Monitoring Program's success is attributed to four aspects of the program:

- **Direct personal contact** between volunteers and a WDNR water quality specialist in a training situation;
- **Frequent communication** between WDNR and volunteers via bimonthly newsletters, individual reports, and the weekly data reporting cards WDNR received from the volunteers;
- **Sense of ownership** the volunteers felt toward the program; and
- **Newspaper articles** published in local papers notifying the public that a volunteer was collecting data on a local lake and that a report was available from WDNR. More than 100 requests for reprints of these reports were received.









Using a LaMotte kit to measure dissolved oxygen took 13 steps out on the lake per depth and 14 steps on shore per bottle!



Phosphorus samples were taken one foot below the surface.

They were preserved with sulfuric acid and shipped to the State Lab of Hygiene five times per year.





Digital pH meters were used but we started out with mercury thermometers.



Whoops! Mercury thermometers were quickly replaced with digital ones.

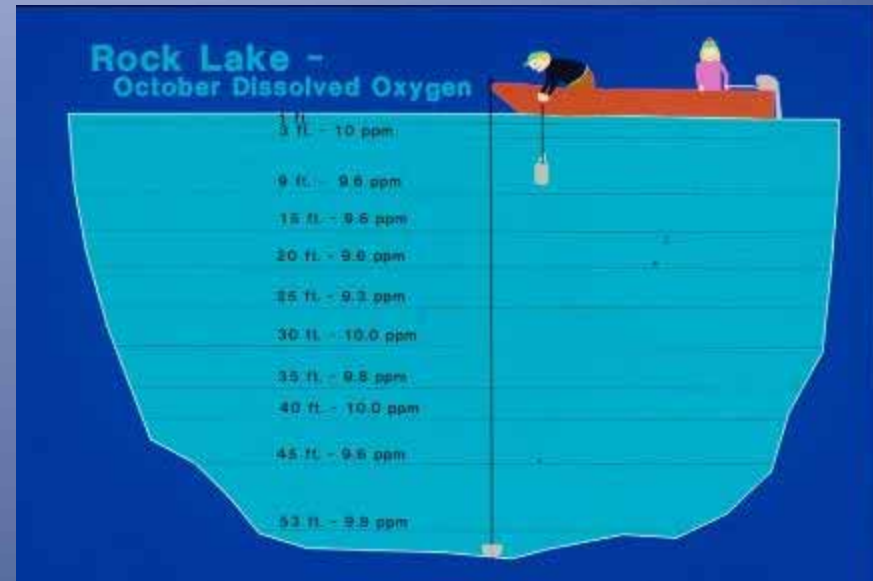


Chlorophyll samples were taken at three feet depth, stored in a plastic juice jug and brought to shore. The volume of water filtered was based on the Secchi depth. The more clear the water, the more you had to filter. The filter paper was then stored in a bottle of desiccant gel and sent to the State Lab for analysis.

Because water clarity, phosphorus and chlorophyll data were collected, the Trophic State Index (TSI) of the lake was able to be calculated. Dissolved oxygen and temperature data were used to indicate things such as lake stratification and turnover. An example of Rock Lake's data is shown below.



Summer stratification



Fall turnover

ON LAKE PROCEDURES

How to Use the Secchi Disk (continued)

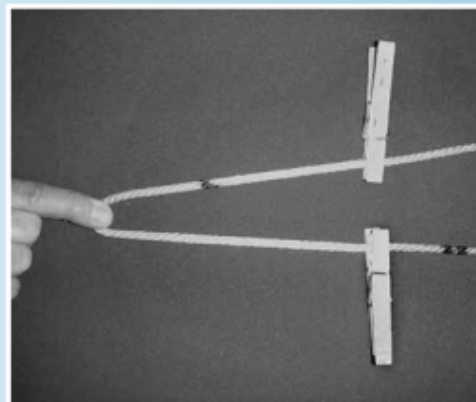
STEP 6. After you have marked this spot with the clothespin, lower the disk a few more feet into the water. Slowly raise the disk. When the Secchi disk reappears, mark the rope at the surface of the water with the second clothespin. The clothespin marks may be at the same spot, several inches or even several feet apart. The purpose of lowering the Secchi disk and raising it back into view is so your eyes become accustomed to looking into the water. The average of the two readings will be a more accurate result.



DWR PHOTO

STEP 7. Bring the Secchi disk back into the boat.

STEP 8. Average your two Secchi disk readings by forming a loop between the two clothespins. Slide one clothespin into the center of the loop to mark it. Remove the other clothespin. The remaining clothespin mark will be your Secchi reading.



JANUARY 1984

STEP 9. Your rope is marked in foot increments. The red lines indicate five, fifteen, and twenty-five feet. The double black lines indicate ten, twenty, and thirty feet. Carefully measure the number of feet from the disk until you reach your clothespin mark. Round off to the nearest quarter foot.

STEP 10. Record this measurement on your data sheet and then fill out the rest of your data sheet.