



George E. Meyer, Secretary  
William R. Selbig, District Director

Shawano Lake Planning Grant

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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Lake Michigan District Headquarters  
1125 N. Military Avenue  
P.O. Box 10448  
Green Bay, WI 54307-0448  
TELEPHONE 414-492-5800  
TELEFAX 414-492-5913

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Direct Telephone #: 414-492-5903

Mr. Ray Zuelke  
President, Shawano Lake Prop. Owners  
598 Linda Court  
Kaukauna, WI 54130

Dear Ray:

There is a great deal of concern by all, about the changes observed on Shawano Lake this open water season. The algae bloom that began sometime in August (still some speculation on the approximate time) and continued, resulted in a lot of concern from private citizens. The Shawano office received the most calls with the fisheries, law enforcement and wildlife personnel responding.

I have taken historical data that goes back to 1968 and pulled it together in some tables and graphs. The information you collected through the Planning Grant program is the most recent complete data set. There was only one secchi disc transparency reading taken in 1995.

The data from 1968 shows very consistent chlorophyll a and total phosphorus values. The 1995 secchi disc transparency reading showed the worse clarity measured to date.

All lakes have the potential for something like this to happen. Researchers have identified a threshold for phosphorus values that when they reach this point there is a good chance for an algae bloom. I have shown this in the graph on phosphorus where I have presented measured vs. a threshold value. The data from 1975 through 1992 shows that phosphorus is just above the threshold value.

Without the phosphorus you can't have algae. Of course there are other limiting factors such as temperature and other nutrients, but phosphorus has been determined to be the limiting nutrient for algae. I have graphed the chlorophyll a information as well. Chlorophyll a is a product of algae. That data also remains very consistent with no dramatic fluctuations in those numbers as well. We have not collected any chlorophyll a data since your lake Planning Grant in 1992.

Secchi disc transparency is also graphed. It shows some ups and downs that would be expected on a large (6,063 a.) lake with a mean depth of 2 meters. The lowest transparency ever measured, from our data base, was taken on August 21, 1995. The value was 0.7 meters. The previous low was 1.1 meter in 1984. On a favorable note, we have seen some readings since 1984 as high as 3.9 meters.

The long term information is extremely valuable in determining any type of trend. It would be nice if we could get someone from Shawano Lake to begin collecting data through our Self-Help monitoring program that began in 1986. The program started out with 113 volunteers, today we have 900. It generally involves someone living on the lake. I am including an information flyer on that program.

I have been talking to department folks in our Shawano office.

We are willing to discuss the Shawano lake situation with your lake members as well as other interested citizens at some kind of a public meeting. Would you be interested? What time of the year is best? Or is it best to wait until next spring at your annual meeting?

All of us are concerned as I know you and your members have been. I tried to call you a couple of times at your work and I realize how busy you are. I didn't want to get into a telephone tag situation so I thought this letter along with the data would be a better way to begin addressing the issue.

We appreciate everything you have been doing for the lake and its members. Take your time getting back to me. We will work something out when you have time.

Sincerely,

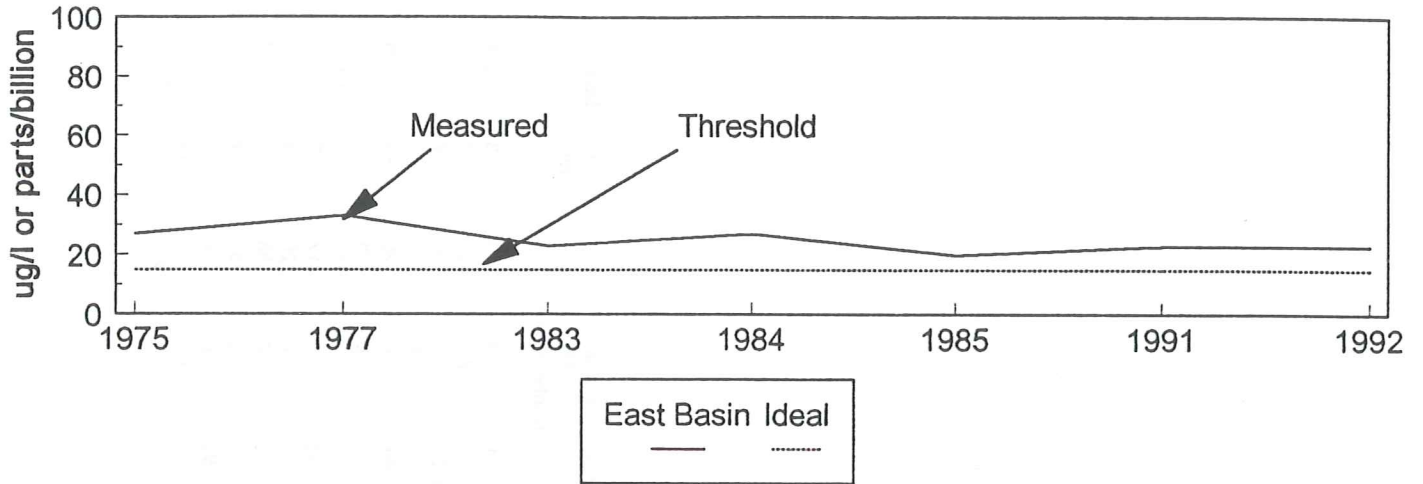


Tim Rasman  
Limnologist

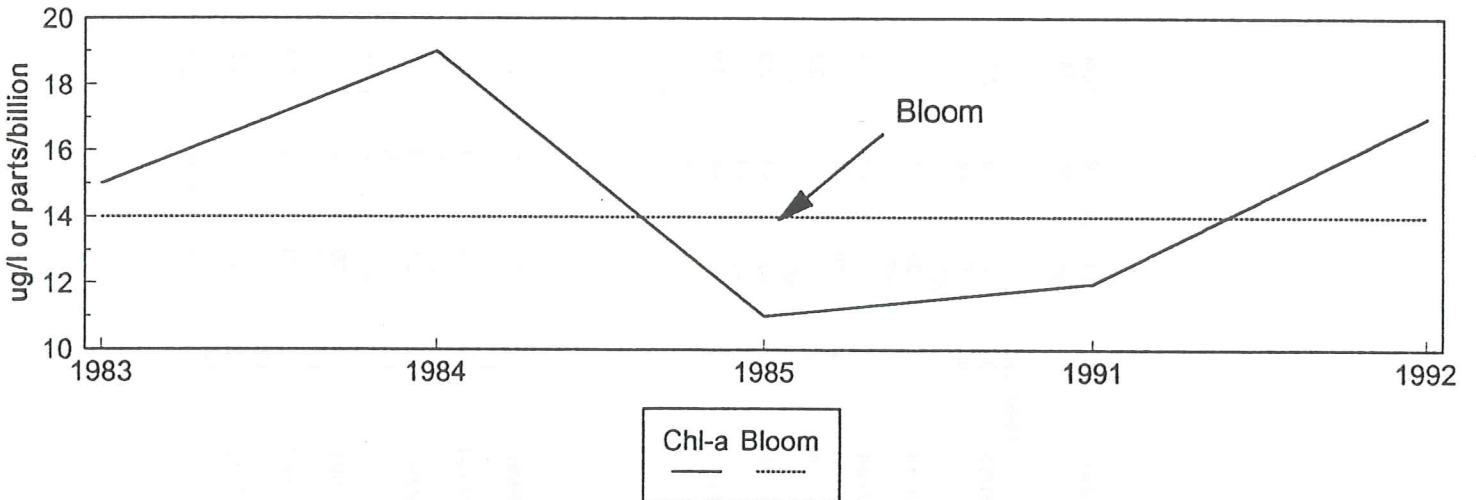
cc: Ross Langhurst - Fisheries, DNR-Shawano  
Rick Herzfeldt - Law Enforcement, DNR-Shawano  
Jim Horn - Law Enforcement, DNR-Shawano  
Mike Hanaway - Water Regulation, DNR-Marinette  
Jeff Bode - WR/2  
John Pnуска - WR/2  
Jim Resick - UW Extension, Shawano  
Bob Korth - UW Extension, Shawano  
Ron Ostrowski - County Conservationist, Shawano  
LMD Water Resources

### Shawano Lake Total-P (ug/l)

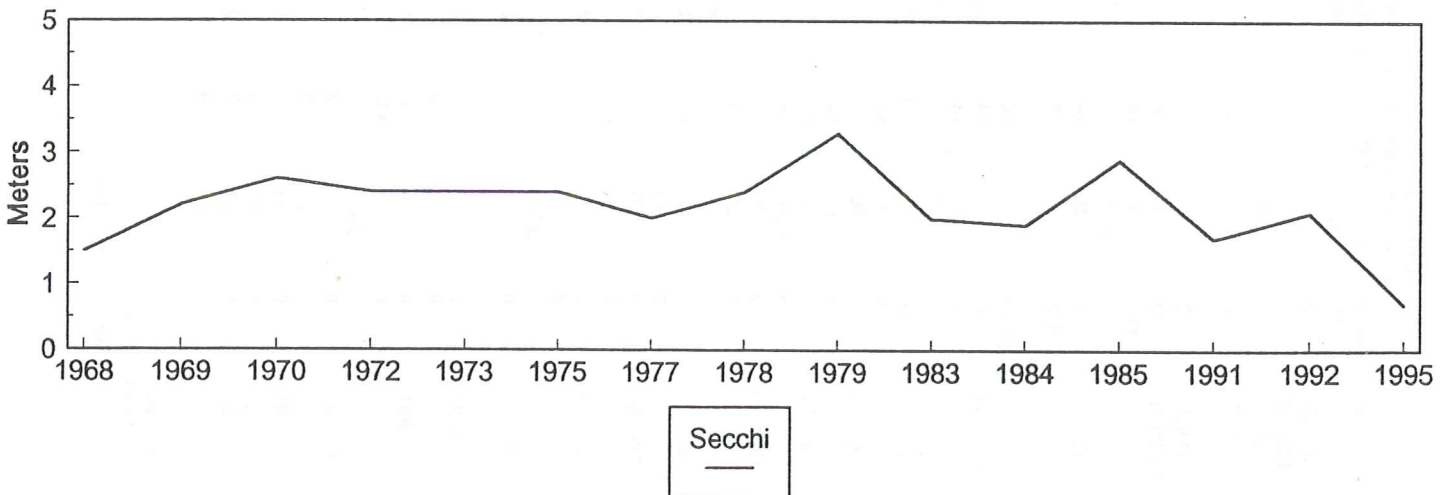
State Lab of Hygiene Data  
Measured Vs. Threshold



### Shawano Lake - Chl-a (ug/l)



### Shawano Lake - Secchi Disc (M)



Shawano Lake  
Wisconsin DNR /IPS Lake Planning Grant Data

Date	Depth		Tot-P		Ortho-P		Secchi		Chl-a		Date	Depth		Tot-P		Ortho-P		Secchi		Chl-a	
	M	ug/l	M	ug/l	M	ug/l	M	ug/l	M	ug/l		M	ug/l	M	ug/l	M	ug/l	M	ug/l	M	ug/l
3/18/75	0	30	0	9																	
4/29/75*	0	111	0	6																	
6/25/75	0	20	0	6	2.7																
10/28/75	0	30	0	2	2.1	2.4**															
8/16/77	0	40	0	21	1.5																
10/25/77	0	30	0	<4	2.4																
	11.5	30		<4																	
		33**		<4	2.0**																
8/2/83	0	30	0	<4	1.8																
	4.8	20	0	<4																	
		25**		<4																	
East Basin																					
10/31/83	0	20	0	<4	2.2																
	4	20	0	<4																	
		20**		<4																	
3/8/84	0	40	0	4	2.5																
	9	20	0	<4																	
5/2/84	0	60	0	<4	1.1																
	5	60	0	<4																	
9/5/84	0	20	0	<4	1.9																
	6	<20	0	<4																	
10/29/84	0	20	0	<4	2																
	8	20	0	<4																	
4/29/85	0	27**	0	<4	1.9**																
	7	<20	0	<4	3.9																
7/31/85	0	20	0	<4	2.3																
	8	20	0	<4																	
10/31/85	0	20	0	<4	2.6																
	8	20	0	<4																	
		20**		<4																	
6/4/91	0	23	0	5	2.9**	11**	12	6/4/91	0	33	5	1.8	11	6/4/91	0	19	3	2.4	11		
	6	20	0	3	2.1				12	21	5				7.6	21	3				
7/30/91	0	27	0	6	1.5	11	7/30/91	0	24	24	4	1.7	14	7/30/91	0	30	7	1.5	16		
	6	23	0	6					24	24	5				7.6	42	5				
9/9/91	0	24	0	<4	1.5	13	9/9/91	0	24	24	4	1.7	14	9/9/91	0	25	<4	1.5	15		
	6	23	0	<4					24	24	5				7.6	25	2				
		23**		<4	1.7**	12**	12	1/27/92	0	25**	4.7**	1.7**	1.8**	1.8**	0	27**					
1/27/92	0	16	0	3					29	29	2			1/27/92	0	17	2				
	6	12	0	3					12	12	3				7.6	26	13				
4/28/92	0	30	0	2	1.8	23	4/28/92	0	23	33	2	1.8	21	4/28/92	0	38	2	1.7	26		
	6	26	0	3					33	33	2				7.6	33	2				
7/7/92	0	24	0	7	2.4	10	7/7/92	0	22	22	3	2.5	9	7/7/92	0	22	7	2.1	7		
	6	27	0	4					23	23	4				7.6	34	11				
8/21/95		23**		4	2.1**	17**			24**	24**	4	2.2**	5		28**						
					0.7				2	2		3.2**									

\*Data Not Used  
\*\*Annual Ave. - Secchi & Tot-P