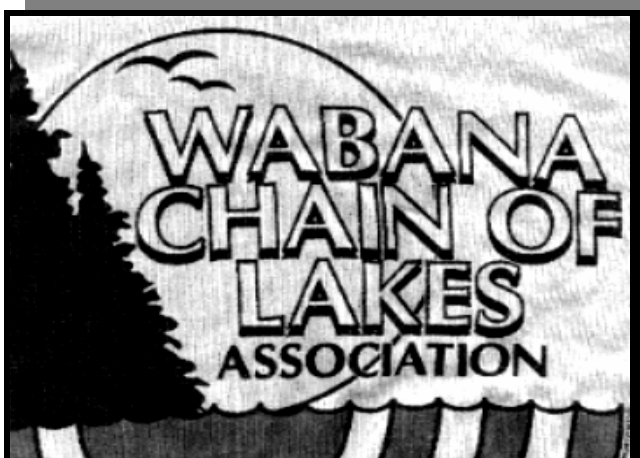


# The Chain Letter

of the



Dedicated to the care and preservation of our lakes, for the enjoyment and safety of all.

# Winter 2005-2006

Volume 9, Number 6

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#### Officers:

President: Dick Chambers 326-2809  
Vice President: Bud Sage 326-4535  
Treasurer: Jean Koewler 326-4302  
Secretary: Susan Lick 326-6837

#### Advisory Committee.

All the above, plus:

John Adams 326-2206  
Steve Bryant 326-5473  
Nancy Ellsworth 326-8056  
David Lick 326-6837  
Sherry Miner 326-0589  
John Zimmerman 326-1020

We are still looking to get someone from Little Trout.

Visit our web site [www.wcola.org](http://www.wcola.org)

Add your items to it by sending to Mark Miner,  
[mminer@minergroup.com](mailto:mminer@minergroup.com)

To have your Chain Letter sent to you by email,  
contact Jean Koewler, [koewlerj@lcp2.net](mailto:koewlerj@lcp2.net)

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#### EDITOR'S APOLOGY

Yes, I know it is March, and the Winter issue is not yet in your hands. The late publication has a lot of reasons, such as awfully busy, Christmas, illness, old age, and lack of pressure. This is the slack time, when I don't have to hustle to get the next issue out to get you the Agenda for the next upcoming meeting. So I relaxed. But this is ridiculous!

I didn't want to hurry Water Quality Chair Richard Brasch in his first time through a report on water testing (see page 6), and he had his employer's work to do and had to go to Hawaii before he could get to it, among other things. And then I discovered that I had lost the September Minutes (see page 2), and it took the cooperation of many people to get me another copy. And I compiled the information about membership (see pages 4-5), and worried over it a lot. The Secchi disk readings needed to be compiled and graphed. Fitting everything onto the pages is always a challenge every month, and it is especially long and detailed in this issue.

It's an ill wind, as they say, that doesn't blow somebody some good, and it's good fortune that I was held up, in one way—it gave me the chance to get the notice in about the important SYMPOSIUM on April 20. This is a cooperative presentation of important groups including ICOLA, Itasca Coalition of Lake Associations. Our David Lick is its President, and he has worked hard to organize the symposium.

**Deadline for next Chain Letter: May 1, 2006.**

I have no advance information, but meetings of the WCOLA in past years have been set at the third Saturday of the month, so I'll guess that will continue, thus I'll put my deadline for May 1, and hope I'll be in time for the Agenda to reach you.

**MINUTES, SEPTEMBER 17, 2005 MEETING  
Wabana Chain of Lakes Association**

**Program.** Bill Berg introduced Joe Stevens of Wichita, Kansas and Bluewater Lake. Mr. Stevens presented a video of old Camp Marmac on Bluewater Lake. Mr. Stevens was a camper at Camp Marmac when he was a boy.

**Business Meeting.** President Dick Chambers called the meeting to order with 34 in attendance.

**Minutes** of the meeting of August 20, 2005 were approved as written in the newsletter.

**Treasurer's Report,** read by Jean Koewler was approved.

<b>Balance as of 8/18/05</b>		<b>7,102.71</b>
<b>Received:</b>		
Dues	540.00	
T-Shirts	60.00	
<b>Total Received</b>		<b>600.00</b>

**Paid Out:**

Ogles (August meeting treats)	5.88	
Stamps & Seals (August newsletter)	137.32	
Fanfare Promotions (Denim shirts	124.55	
MN Lake Assn (Dues 2005-2006)	100.00	
Instrumental Research (Water testing)	541.00	
Treasure Bay Printing (By-Laws)	10.65	
Treasure Bay Printing (Aug newsltr)	125.80	
Stamps (Sept. Newsletter + 20)	125.80	
Treasure Bay Printing (Sept. newsltr)	154.43	
<b>Total Paid Out:</b>		<b>1,325.30</b>

**Balance as of 9/16/05** **6,377.41**

**Total Paid Households:** **124**

**Agenda.** President Dick Chambers asked for any additions to the agenda. The agenda with one addition was approved.

**By-Laws Committee.** Chairman of the By-Laws Committee, Bill Downing, noted on page 5 of the September 2005 WCOLA newsletter by-law changes and suggestions. The IRS and Secretary of State to be contacted in regard to a 501(c)3 Application for Non-Profit Status. Bill Berg raised a question regarding

anyone having legal or accounting experience that could fill out these forms for tax-exempt status. This status will require a new by-law of the WCOLA. Mr. Downing requested any other additions, changes or concerns be addressed to him or a member of the By-Laws Committee.

**Wabana Township Planning and Zoning.** Bud Sage gave an update on the Wabana Township Board regarding planning and zoning responsibilities. Public meeting to be scheduled. Wabana Township residents are encouraged to attend these meetings. Any concerns or questions may also be directed to Steve Bryant or Bud Sage.

**WCOLA Lakeshore Signs.** Bud Sage presented a prototype of a lakeshore dock sign that David Lick had made up. Bill Berg who has been working with Juan Lazo presented samples of materials and the costs involved to be used for lakeshore signs. Bill Berg will write an article for the newsletter listing these costs. President Chambers made the suggestion that the WCOLA pay for these signs and hand them out to the membership. The matter will be brought up at the WCOLA May 2006 meeting.

**WCOLA Logo Shirts.** Bud Sage set up a display of denim shirts with the new WCOLA logo. Contact Bud Sage to purchase and order these shirts.

**Highway Cleanup.** President Chambers thanked the volunteers who signed up for the Wabana Township road cleanup. Volunteers will meet at the Wabana Town Hall on Wednesday, September 28<sup>th</sup>. If raining, Thursday, September 29<sup>th</sup>. Itasca County will provide safety vests and garbage bags. Spring cleanup will be discussed at the WCOLA May 2006 meeting.

**WCOLA Secretary.** President Chambers said the association is still looking for a substitute-recording secretary to help Susan Lick.

**WCOLA Volunteers.** President Chambers thanked all the volunteers who gave of their time and talents during the year. Bill Downing wanted to give special thanks to Bill Berg and Susan Hawkinson for all the wonderful programs they set up during the year.

**WCOLA Public Campsites.** President Chambers read a letter he received on behalf of the WCOLA from Bob Moore, Area Supervisor, Minnesota Department of

Natural Resources. Mr. Moore is aware of the concerns regarding maintenance, group size and increased use of campsites. Mr. Moore requested a meeting with concerned parties regarding these issues. A tentative meeting date of October 4, 2005, was set. A postponement of this meeting until May 2006 was discussed. President Chambers asked Bill Berg and Ken Zimmer plus Advisory Board members to attend this meeting.

## New Business

### WCOLA Check Authorization and Signatures.

Treasurer Jean Koewler asked to have two names on the WCOLA checking account for signing authority. A motion was made to authorize the president, vice president, secretary and treasurer to have the ability to write and sign checks for the WCOLA organization. Motion approved.

A question was brought up in regard to requiring two signatures on a check over a certain amount of money. The Advisory Committee will contact the bank and discuss options.

**Meeting Adjourned.** A motion was made and approved to adjourn.

Respectfully submitted,  
Carol Burkholder

## LOON COUNTS (CONTINUED)

*The following items are extracted from some 2005 emails, and they may help answer some questions in your mind about the official loon count that is taken by the DNR annually. In June, Reggie Boyle worried that the loons on Little Trout (Interlachen) did not get included, and wrote me*

Dear Bill,

I'm not sure whom I should contact on this subject, but if you are not the right person, I think you will know who is!

I have been slow to write, but I wanted to question the loon count for Little Trout Lake for the last couple of years. I am a resident of Little Trout, and I am confident there were two loons on the lake last year, and almost certainly the year before - but I believe that only one loon was noted in the official count for each year. I would not dispute that there were no chicks in recent years. I do think it is worthwhile to set the record straight - and I would be happy to volunteer as resident loon counter for Little Trout if there is a vacancy. Not a very arduous job, and I think I am up to it!

For 2005, I can confirm that there are two loons on Little

Trout this year, so I hope they will produce a family.

Thanks for your work on the Chain Letter.  
I and my family enjoy it every time.  
With best wishes,  
Reggie Boyle

*I referred Reggie to Bill Berg, since I knew nothing at all about the loon count. I imagine that Reggie then wrote to Bill, and on July 7, Bill Berg responded to me:*

Bill----

The "official" DNR loon numbers for 2005 are: Trout Lake 15 adults and 2 young (twins); Little Trout 2 adults; Spider 18 adults and 2 young (twins); Sand 8 adults; Sunrise 2 adults. Reproduction is down from previous years.

Perhaps the WCOLA loon counters have the numbers for Wabana by now to add to the totals.

*At the same time Bill also responded to Reggie, as soon as he returned from his trip to the sub-Arctic of Manitoba, to explain further how the official loon count works. I was glad to read this, since I now understand loon counts better:*

I count Little Trout when I do the Big Trout loon survey for DNR (along with Spider, Sunrise, Ruby, and Sand). This is an official DNR survey with strict protocol, but there is nothing wrong with counting loons on your own, either; for example, some WCOLA members count loons on Wabana, although that is not on DNR's survey list.

ON July 4th, I counted 14 adults and 2 chicks (twins) on Big Trout, and 2 adults on Little Trout, so those are the "official" numbers for 2005. About 4 years ago, there were very rare loon triplets on BOTH lakes, and I have the video proof to back it up. Amazing!

I hope to survey both Trout Lakes for at least a couple years to come, and if the Lord will not let me do more, I'll gladly turn over the surveys to you.

best regards and thanks for your interest in our natural resources-----Bill Berg

*Then Reggie wrote Bill in October:*

Dear Bill (Berg):  
I was just reading about your latest loon survey, in the Chain Letter, and had this awful feeling that I never replied to your message. Many apologies. I have now understood the difficulties of Wabana being excluded from the survey, etc., and also that the rules are strict for the actual count. Nevertheless, I see that yours is the voice of experience, so I am glad that this important matter is in your hands.

I was so disappointed that our Little Trout loons failed to raise a family this year. You probably saw that they built

their nest just inside the entrance to the Little Trout/Wabana channel, on the left side. It probably seemed like a wonderful spot when they chose it, but as soon as the boat traffic started they thought better of it, and abandoned their single egg. Oh, dear. I wished I could move the nest for them, as I had to do (successfully) for the Phoebes that insist on building above the front door of our cabin every year.

*I hope this letter exchange helps others to understand the labyrinth of "official" data as much as it did me.*

## EARTHWORMS

To the editor:

We attended the Million Acres Conference in Duluth this past February. There were several fascinating and important workshops at the conference – stewardship, timber management, habitat creation -- among others. I wish that every concerned lakeshore property owner could have been there.

One of the most interesting workshops that we attended was "Earthworms Are Exotic," led by a professor at the University of Minnesota. There were many eye-opening revelations, such as:

- All earthworms and nightcrawlers are non-native species and were brought from Europe and spread via dumped bait and the movement of compost materials.
- Earthworms and nightcrawlers can invade an area at a speed of about 10 meters a year.
- Worms, especially the small, reddish-brown ones that live in the topsoil, can rapidly remove duff (decomposing leaf cover) thus exposing root crowns of trees and making the tree vulnerable to disease.
- They can also churn up the soil at a faster-than-normal rate so that nutrients are leached away from plants.
- Earthworms make it difficult for some of our favorite wildflowers (such as Trillium and Bellwort) to grow and also make conditions favorable for slugs to move in and destroy plants growing on the forest floor.
- If you have areas in your forest that seem to be meadowy – covered with sedge or, worse, simply have bare ground -- you may have a large infestation of earthworms.
- A new Asian worm is starting to come into our area and they are even more voracious eaters. They are characterized by transparent skin and hyperactivity.

While there is nothing we can do to undo the damage already done, we can help prevent more earthworms from invading:

- Use up all of your bait – do not dispose of it in the garden or compost heap. If you must dispose of them, put them in your trash.

- Be careful of using purchased compost for your garden. It is best to let it over winter outdoors in bags before using.

For more information, see [www.nrri.umn.edu/worms](http://www.nrri.umn.edu/worms).

Libby Colburn

## MEMBERSHIP ROLL

*On the next page you will find the 2005-2006 list of the 140 paid members of the Wabana Chain of Lakes Association. Along with the membership name, you'll find what we believe is the lake of your primary interest. If that's wrong, please let us know. B=Bluewater, C=Clearwater, IL=Island Lake, LH=Little Hanson, LT=Little Trout (aka Interlachen), LW=Little Wabana, P=Pickerel, T=Trout (aka Big Trout).*

*If your name is not listed, there are two possible explanations:*

1. *We are mistaken, or,*
2. *You forgot to pay your dues this year.*

*The rule of thumb that we follow is: Volunteers make Mistakes, and we'll fix anything we can.*

*The asterisks, or stars, on the lines between names are where names were in 2004-2005 and are not now. Those are people, or households, who were members last year and are not this year. I will not publish names of those lapsed, but print only paid members' names, so if you want to check with me to see if you are an asterisk, send me an email (see page 1 for address) and I'll tell you by return.*

*I count about 140 paid members and forty-eight asterisks, which translates into about 25% unpaid, which is \$960 lost revenue for your Association. That is about enough to pay half of water testing lab fees when we do water testing. (Ideally we should test at least every two years, if not yearly, but it's expensive, so we test about every four years.)*

*The good news is that we gained sixteen additional paid members who paid dues this year but missed last year, so our total membership is up, despite the lost ones.*

*I know that the missed dues are not intentional—gee, twenty bucks is pretty cheap, right?—but it makes your Association's income unpredictable and spotty. We tried sending out envelopes at dues-paying time a couple of years ago, and that worked pretty well, and so we will start that again this May; but we need other ideas from you, about how we can improve our spotty membership payments. Will you write me about it?*

*If you are feeling embarrassed about paying this year's dues you can still do it. Or you can forget this year, and get a head start for next year (due July 1) by sending a check for \$20 marked "2006-07 WCOLA dues" to Treasurer Jean Koewler, 32040 Wakeman Bay Trail, Grand Rapids, MN 55744. Or you can wait for the envelope.*

*To the By-Laws Committee: I suggest that we add a Standing Membership Committee, to resolve a series of questions about membership. We had such a group in the last century, and it worked well. One major thing we could do, if we want to open a can of worms, is to change our fiscal year beginning July 1 to January 1, so we'd know all summer who is eligible to vote. Please tell me what you think!*

## 2005-2006 MEMBERSHIP

John & Cheryl **Adams** – LW

Pat & Jan **Adams** - B

\*

Duane & Marion

**Amundson** - W

Russ & Yvonne **Barto** - B

\*

Craig & Cindy **Bender** – W

Anne E. **Benson** – B

Wm. & Helene **Berg** – T

Joan **Birkemeyer** – W

\*

Steven & Caroline **Bischoff** – W

Bud & Agnes **Blackmore** – W

Terry & Lynn **Boblit** - W

William & Jeannette

**Booth** – W

Mary Frances & Bill

**Bottoms** - B

Reginald & Susan **Boyle** – LT

Steven & Lynette **Bryant** – B

Chris & Nancy **Bunge** – W

Ted & Gail **Bunge** – W

Dan & Jeanne **Burke** – W

Gary & Carol **Burkholder** – W

\*

Libby & Dennis **Capps** – W

Richard & Patricia

**Chambers** – W

Warren & Kay **Chapman** – W

\*

John F., Dennis, & Kathi

**Chervinko** – T

\*

Libby & George **Colburn** – W

Mark & Ellen **Conover** - W

Kevin & Donna **Costello** - B

Martin **Coughlin** – W

Stanley & Mary Lee **Craig** – W

Dennis & Janice **Davis** – W

Edward & Helen **Dettmer** – P

Charles & Diane **Dokmo** - W

Fred & Kathy **Doty** – W

John & Marcia **Downing** - W

William & Betsy **Downing** – W

James & Virginia **Edwards** – W

Bernadette **Eich** – W

\*

Nancy **Ellsworth** – B

\*\*

Ted **Ellsworth** – B

\*\*\*

Eric & Jan **Fredbeck** – W

Peter & Chris **Friedlieb** - W

Gordon & Lynette **Fuller** - W

Phil & Deborah **Gelbach** – W

Mary & Bob **Gephart** - W

John & Martha Ann

**Gettinger** - W

Tom & Barb **Gleason** – W

Jim & Marcia **Gowling** – W

John & Sharon **Gray** - B

Ann **Green** – W

\*

Barbara **Haanpaa** – W

Robert & Bonnie **Halver** – W

Vicky & Rick **Harding** - T

\*\*\*

Susan **Hawkinson** – D

Beverly **Hemmingson** - W

\*

Walt & Kim **Hoffman** – W

Ronald & Beatrice

**Houwman** – W

Louis & Barbara **Ireton** – T

\*

Dave **Johnson** – W

Donald & Roxanne **Kain** - LW?

Rex & Melanie **Kastner** - T

\*

George & Mary Lou **Klacan**- B

Richard & Dorothy **Klinger**-W

Dennis & Jean **Koewler** – W

\*

Dara Wolf

**LaForce-Skelton** – T

Steven & Chick **Laitman** – W

Adam **Lane** – W

William & Pat

**Langenbrunner** – W

\*

Jerald & Emma **Larson** – W

Mark & Cynthia **Lavalier** - W

Juan & Christina **Lazo** – W

David & Susan **Lick** – W

Roger & Nancy **Linder** – W

William H. & Kathryn J.

**Linder** - B

\*\*

**Lovelace Family** - W

John & Karen **Lukens** - W

\*

Jim & Pat **Maijala** – B

\*

Richard & Nancy **Massaro** --IL

\*

Mark & Kathy

**McCullough** – W

\*

Steven & Pat **Mead** – B

Arthur & Margaret

**Merrill/Morris** – W

Johanna **Miller** – W

\*

Jon & Pamela **Miner** - W

Mark **Miner** – W

Sherry **Miner** – W

John **Carroll** & Irma **Moore**- W

Robert & Kay **Moore** - W

\*\*

Connie **Myers** – B

W. H. & Arletta **Myers** – B

\*

Dorothy **Myrick** - W

\*

Richard & Kathleen **Nelson**- W

\*

Susan A. **Cutler** &

Terry **Novak**- W

David & Judy **Nybakken** – B

David & Carolyn **Nyren** - W

Paul & Barb **Oberg** – W

\*

Jim & Gail **Olijnek** – W

Kay **Owen** – W

\*

Stan & Jean **Polpovich** – W

Tom & Mary Lou **Prouty** – W

Stella **Quaday** – W

\*

Terry **Robinson** – B

Catherine **Rudolph** – W

Bill & Diane **Rutherford** - B

Bob **Sage** – B

Brenda **Boss** & David **Sage** – B

L. W. "Bud" & Mary Lou **Sage**-B

Mark & Cathy **Sage** -- B

Randy & Nancy **Sage** -- B

Stuart W. & Tanya **Sage** – B

Rich **Brasch** & Carole **Schmidt**-W

Fred & Joan **Schnitzler** – LH

\*

William & Sally **Schwartz** -- ?

Mark & Amy **Sherer** – W

Wayne & Elizabeth **Sherer** – W

David & Beverly **Sigfrinius** – W

Sylvia **Sights** – W

Gordon **Slabaugh** – B

\*\*\*\*\*

Scott & Jan **Stein** – W

Joe & Martha **Stevens** – B

Philip & Karen **Strege** - ?

\*\*

Kurt & Lavonne **Thompson** - B

Sylvia **Troumbly** – LW

Harold & Betty **Unger** – T

John & Mary **Uradnik** – W

\*\*

Mrs. Susan **Vincent** – W

Ted & Swanee **Voneida** – B

Scott **Wakeman** - W

\*

Pamela **Wassberg**

**Whittenbury** – LT

Merrill & Marlene **Widmark** - W

George & Dolores **Wilbert** – W

Sally & George **Wilbur** – W

Michael & Barbara **Wilkus** – Bl

Gib & Kathleen **Willson** – W

Gig & Kristen **Willson** – W

William T & Donna M. **Wolf**, Jr - T

David & Karen **Wooden** – B

\*

Ken & Barbara **Zimmer**, Jr. – W

Susannah **Zimmer** – W

James & Marie **Zimmerman** – T

John & Charlotte **Zimmerman**-T

John & Alida **Zimmerman**, Jr. – T

Mark & Alexandra **Zimmerman** T

Mike & Brenda **ZumMallen** – LT

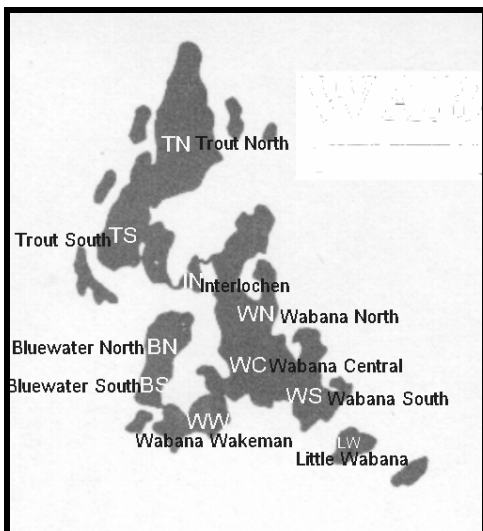
## WATER QUALITY REPORT 2005

*This is a new era in WCOLA water testing. Richard Brasch has agreed to Volunteer for the Chair of the Water Quality Committee, and he collected the samples at the four collection times this year, then took them to the laboratory for testing. He wrote the following article for The Chain Letter, and we present it along with additions by fellow limnologist John Downing. It should be noted that the temperature and oxygen measurements cited are taken by John, and he presents them gratis to the Association membership. I helped John with that measurement a couple of times, and could not believe the technological advances. Dropping one sensor over the side of the boat and sending data to a computer did the work that would have taken days, weeks or months to do in "my day"—if it could be done at all."*

### Water Quality Report from 2005 Testing

by Richard Brasch and John Downing

**Chemical Testing.** In 2005, the Association completed its third full year of chemical water quality sampling for the Chain. Similar water quality testing was completed in 1991 and 1999 as well, so the Association is beginning to develop a long-term data base of basic water chemistry. As in past years, nine sites were sampled throughout the Wabana-Bluewater-Trout Lake Chain and one site was sampled on Little Wabana. The general locations of the sampling sites are shown on the map below. As in 1991 and 1999, each site was sampled four times during the spring and summer. In 2005, the first sampling excursion was on April 30, soon after ice out when the lakes are usually fully mixed (and cold!) from top to bottom. After that, samples were taken on June 26, July 31, and September 4.



The Association analyzes each sample for phosphorus, chlorophyll "a" and nitrogen. As most Association members know, phosphorus and nitrogen are both plant nutrients, and chlorophyll "a" is a measure of the amount of algae suspended in the water column. Phosphorus is especially important because it is the plant nutrient that most directly controls algae growth, especially in relatively clean lakes like the Chain. Even a little more phosphorus in lakes like the Wabana Chain often means a lot more algae growth. Scientists have determined that just one additional pound of phosphorus (about the amount generated by one household through its sanitary waste in one year) results in 500 pounds of additional algae! This not only means lower water clarity, but it can reduce oxygen in the water needed by fish and other aquatic organisms. This is because much of the algae dies and decomposes, using up the lake's oxygen in the process. This problem is of particular concern in lakes that support a trout fishery, like Bluewater and Trout lakes, because trout need extremely high levels of oxygen in the water to survive and they often inhabit the deeper, colder parts of the lake where oxygen levels can be most severely affected.

Tables 1 and 2 show the average phosphorus and chlorophyll "a" values, respectively, for the June-September period in 1991, 1999, and 2005 at each of the stations sampled. Similar data for nitrogen is also available and can be viewed on the web site (<http://www.wabanalake.com/WQ2005.html>), as can the individual data values collected for all parameters and at all sites for all three years of sampling. The reason the data are presented this way is that it is the June-September average values for phosphorus and chlorophyll "a" (along with water clarity as measured by Secchi disk readings) that lake scientists and environmental regulators depend on most to determine a lake's condition.

At the right hand site of each table are the reference values recently published by the Minnesota Pollution Control Agency (MnPCA) for lakes in this part of the state. If the actual values exceed these reference values, it is at least a yellow flag that water quality of the lake in question may be considered threatened for the purposes intended. Reference values for both Bluewater Lake and Trout Lake are lower than those for Wabana, Interlachen, and Little Wabana because the former are designated trout lakes that require cleaner water-including well-oxygenated deep water habitat –



to support trout populations. Where the water quality values are well below the reference values-as they are for the Wabana, Interlachen, and Little Wabana sites- it is essential to work hard to keep that “buffer” intact. This is important for several reasons, including the following:

- Natural fluctuations in lake quality occur because of year-to-year variations in climate factors, especially precipitation (infrequent large rainfall events can wash lots of pollutants into the lakes, as probably happened in 1999). The cleaner the lake is to begin with, the less long-term impact these events will have on water quality.
- It’s a good bet that climate change is a given. We can probably expect longer growing seasons and more large runoff-producing events, resulting in more plant biomass that the lakes have to “digest” each year. Again, if we can reduce the human input into the lakes, they will be better able to handle additional climatically-driven input without showing long-term effects of problem algal blooms, loss of oxygen in deep waters, etc.
- Allowing the lakes to degrade to the 30 ppb threshold would result in a visible change in the overall excellent water quality we have now, with more frequent algae blooms and significant decreases in transparency. We should strive to preserve the mostly excellent water quality we have now rather than letting our lakes go to a merely “average” condition for this region of the state. There is some suggestion in the data that Wabana South and Wabana Central may be increasing a bit in phosphorus.

**Table 1 – Summer (June-September) Mean Values for Total Phosphorus (Values in parts per billion)**

Lake/Station	1991	1999	2005	MnPCA Criteria
<i>Bluewater North</i>	6.0	20.1	8.7	12
<i>Bluewater South</i>	3.7	11.5	10.0	12
<i>Interlachen</i>	11.3	10.5	13.3	30
<i>Trout Lake North</i>	9.3	11.3	<b>14.0</b>	12
<i>Trout Lake South</i>	7.0	8.8	<b>17.0</b>	12
<i>Wabana North</i>	10.3	14.2	10.2	30
<i>Wabana Central</i>	10.3	12.1	12.7	30

Lake/Station	1991	1999	2005	MnPCA Criteria
<i>Wabana South</i>	8.7	11.9	13.0	30
<i>Wabana Wakeman Bay</i>	23.0	17.6	15.7	30
<i>Little Wabana</i>	9.3	13.9	12.0	30

**Table 2 – Summer (June-September) Mean Values for Chlorophyll a (Values in parts per billion)**

Lake/Station	1991	1999	2005	MnPCA Criteria
<i>Bluewater North</i>	1.9	2.3	0.5	3
<i>Bluewater South</i>	2.1	2.3	0.8	3
<i>Interlachen</i>	2.3	4.6	0.8	6
<i>Trout Lake North</i>	2.9	2.3	0.9	3
<i>Trout Lake South</i>	2.7	1.9	0.7	3
<i>Wabana North</i>	3.0	2.8	1.1	6
<i>Wabana Central</i>	2.7	3.1	1.4	6
<i>Wabana South</i>	3.3	3.0	1.1	6
<i>Wabana Wakeman Bay</i>	6.1	5.5	1.8	6
<i>Little Wabana</i>	2.6	3.2	1.1	6

Three data points is not much when one is looking for year-to-year trends, which underlines the need for continuing the effort to build the long-term water quality data base. There is an increasing tendency for state agencies to delegate water sampling to citizens groups, so we should expect to need to do this into the future. However, in looking over the data for the three years of sampling, there are two items that appear particularly worthy of note:

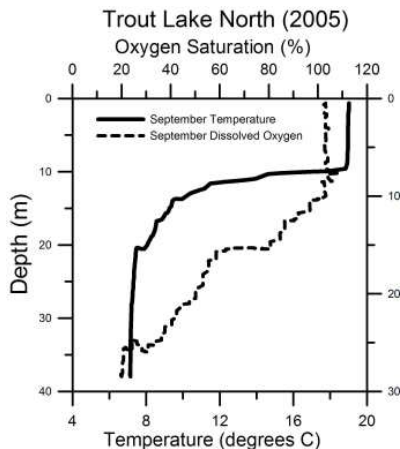
- **The 2005 phosphorus values for both Trout Lake stations appear to have risen significantly compared to past years and were above the MnPCA threshold for designated trout lakes.** However, the chlorophyll “a” data appear well below the MnPCA threshold, suggesting that -at least for this year- the additional phosphorus in the water column did not translate into additional algae. This may have something to do with the calcium carbonate in the water that gives Trout Lake its aquamarine color (too long to explain here). It should be noted that the developments in the northern portion of the lake are outside Wabana Township. It is not clear what the condition of septic systems in this vicinity of the Chain are and whether

they could be contributing to the apparent change in water quality.

- **Wabana Wakeman has shown a sustained improvement in water quality based on both the phosphorus and chlorophyll “a” values and is now nicely below the MnPCA thresholds.** This could suggest that the efforts at cleaning up septic systems are already having a positive impact on water quality in this part of the lake.

One thing that we were able to do in 2005 is to look at water column profiles to assess stratification and oxygen concentrations. We used a multi-parameter data sonde that makes measurements every second as is lowered through the water. You can look at these profiles on the web:

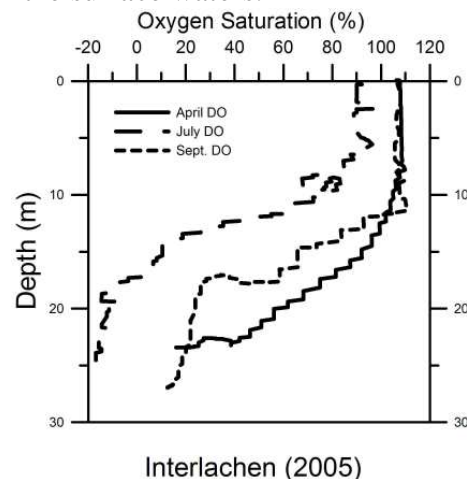
(<http://www.wabanalake.com/WQ2005.html>). We show a few of them here to illustrate some things.



The first graph shows the temperature and oxygen profiles in Trout Lake in September (a meter [m] is about a yard). This lake shows considerable oxygen depletion in the deeper waters that are inhabited by cold water fishes. Low oxygen concentrations occur through the breakdown of organic matter that grows in response to nutrients in the upper waters.

The second graph shows the oxygen profiles in Interlachen (*aka* Little Trout Lake) at three points during the year. This lake was always stratified, even in the early spring. This is quite rare among the world’s lakes and probably results from the very large inflow of water from Trout Lake. Also, this little lake probably never mixes, due to the small size and great depth of the lake. We never found very much oxygen in the waters below about 30 feet of depth (10 m). This little lake can be considered to be almost like two separate lakes. The upper lake is like a river flowing from Trout to Wabana

while the lower waters are quite stagnant and don’t mix much with the surface waters.



### SECCHI DISK READINGS 2005

*On the next pages you will find the 2005 Secchi disk readings of thirteen sites in our chain of lakes. The table is on page 9, graphs on page 10. Graphs in color may be viewed on our web site. Nancy Ellsworth’s wonderful crew of resolute readers has provided wealth of data again this year. These readings are often called the quickest and best way to keep a continuous check on water quality, because they measure transparency of the water. If algae, or other material, clouds the water, the distance down that the disk can be seen will become shallower.*

*We have gone from ten sites in former years to thirteen sites this year for a couple of reasons. We added the IS Island Sound site in Wabana because that is probably the route followed by most of the water from BN and BS Bluewater and WW Wakeman Bay on its way to the Wabana outlet; and there are quite a number of homes built in that area. We added the two sites to the Trout Lake group, that Harold and Betty Unger and Bill Berg have been reading for the MPCA for many years. So you will see that TC, Trout Central, and TI, Trout Island, added. The TI site is in the non-blue southern part of Trout Lake (that’s the part that old maps and I call “Little Trout”) north of the island. This whole matter needs to be worked on and stabilized, but this is what we can give you this year.*

*In the “December” issue of 2004 I published composite graphs of Secchi readings for several years, which you can see at the WCOLA.org web site in the newsletter archive. Graphs do not seem to show any trends in water transparency in our lakes so far, which is gratifying, but it is important to continue reading. The graphs do show, however, that each year is different, and it is interesting to speculate about the factors involved in clarity or turbidity of the water—silt from runoff, water temperature, algae growth, crystals of calcium compounds in the water, etc.*

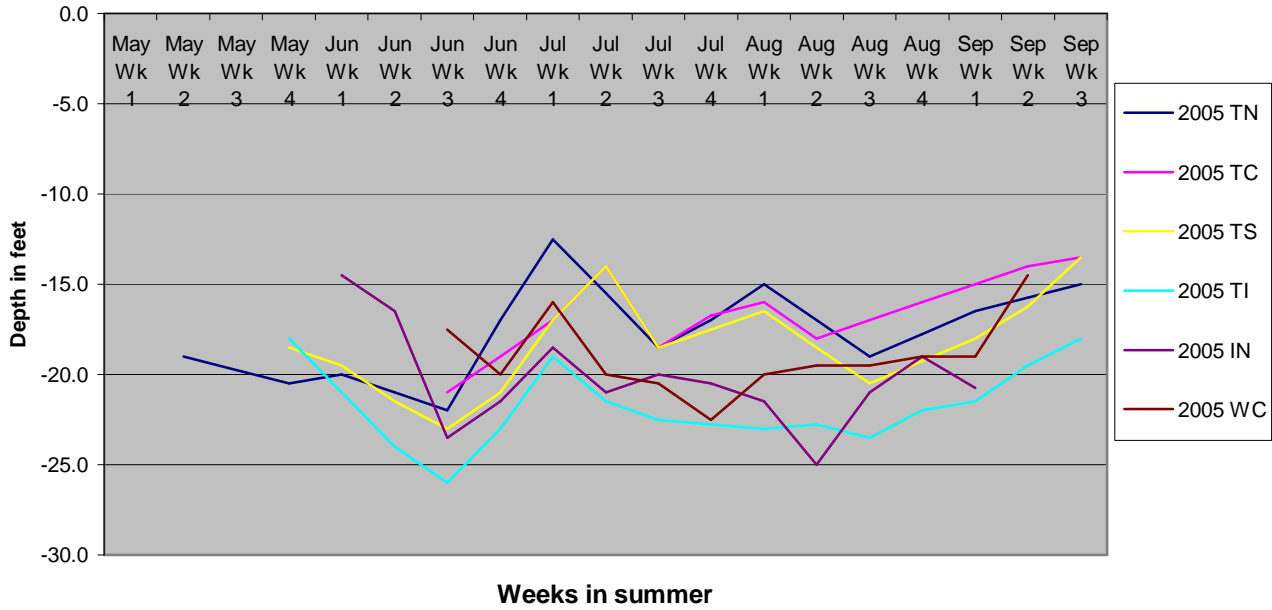
*I have divided the data into two groups, NORTH HALF from Trout into Wabana; SOUTH HALF from Bluewater to Wabana Creek. The newsletter is published in black-and-white, but if you want to see the graphs in color, go to our website, WCOLA.org*



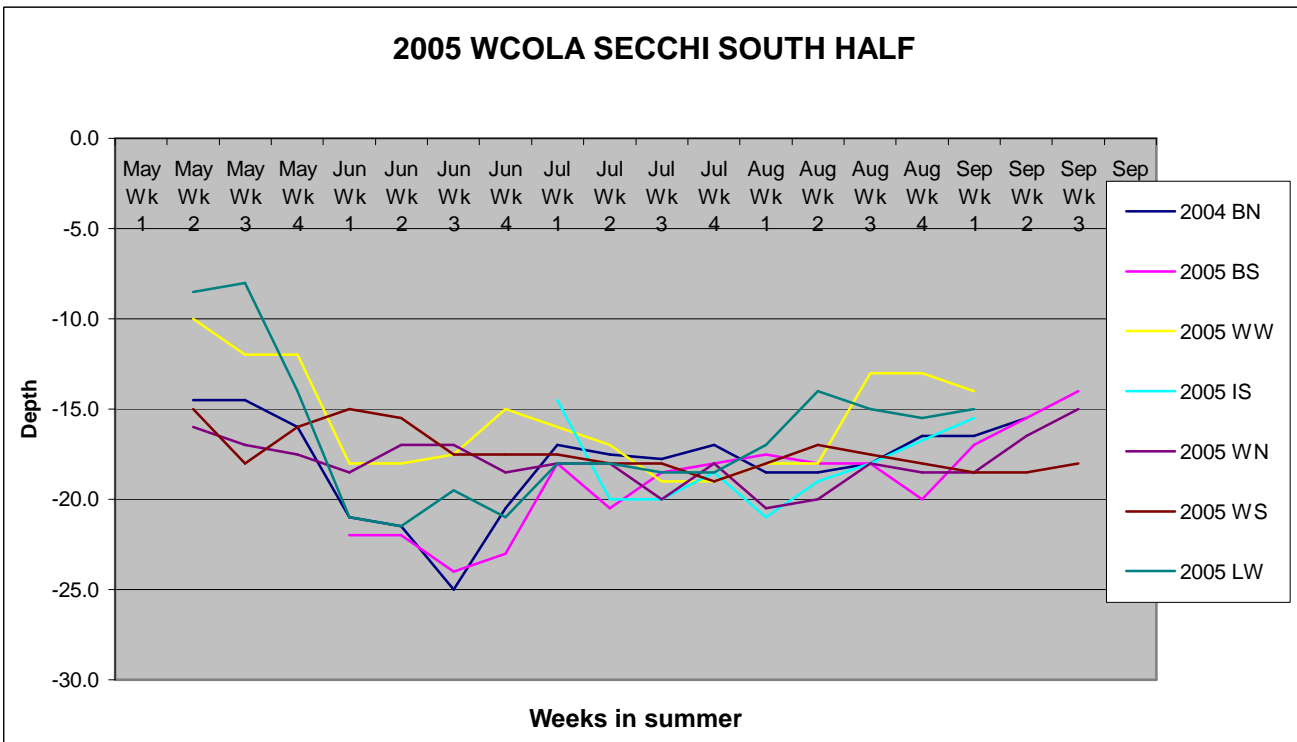
2005 SECCHI DISK READINGS - NORTH HALF						
BASIN==>	2005 TN	2005 TC	2005 TS	2005 TI	2005 IN	2005 WC
May Wk 1						
May Wk 2	19.0					
May Wk 3						
May Wk 4	20.5		18.5	18.0		
Jun Wk 1	20.0				14.5	
Jun Wk 2					16.5	
Jun Wk 3	24.0	21.0	23.0	26.0	23.0	17.5
Jun Wk 4			21.0	23.0	21.5	20.0
Jun Wk 5						
Jul Wk 1	12.5	17.0	17.0	19.0	18.5	16.0
Jul Wk 2		14.0	14.0	21.5	21.0	20.0
Jul Wk 3	18.5	18.5	18.5	22.5	20.0	20.5
Jul Wk 4					20.5	22.5
Jul Wk 5						
Aug Wk 1	15.0	16.0	16.5	23.0	21.5	20.0
Aug Wk 2		18.0			25.0	19.5
Aug Wk 3	19.0		20.5	23.5	21.0	
Aug Wk 4					19.0	
Aug Wk 5						19.0
Sep Wk 1	16.5		18.0	20.5	20.8	14.5
Sep Wk 2						
Sep Wk 3	15.0	13.5	13.5	18.5		
Sep Wk 4						
Readers	Bill	Bill	Bill	Bill	Paul	Sherry
"====>	Berg	Berg	Berg	Berg	Oberg	Miner

2005 SECCHI DISK READINGS - SOUTH HALF							
BASIN==>	2004 BN	2005 BS	2005 WW	2005 IS	2005 WN	2005 WS	2005 LW
May Wk 1							
May Wk 2	14.5		10.0		16.0	15.0	8.5
May Wk 3	14.5		12.0		17.0	18.0	8.0
May Wk 4	14.5		12.0		17.5	16.0	14.0
Jun Wk 1	16.0	22.0	18.0		18.5		21.0
Jun Wk 2	21.5	22.0	18.0		17.0	15.5	21.5
Jun Wk 3	21.5	24.0	17.5		17.0	17.5	19.5
Jun Wk 4	25.0	23.0	15.0		18.5		21.0
Jun Wk 5	20.5						
Jul Wk 1	17.0	18.0	16.0	14.5	16.5	17.5	18.0
Jul Wk 2	17.5	20.5	17.0	20.0	18.0	18.0	
Jul Wk 3	17.8	18.5	19.0	20.0	20.0	18.0	
Jul Wk 4	17.0	17.0	19.0	18.5	18.0	19.0	18.5
Jul Wk 5		18.0					
Aug Wk 1	18.5	17.0	18.0	21.0	20.5	18.0	17.0
Aug Wk 2	18.5	18.0	18.0	19.0	20.0	17.0	14.0
Aug Wk 3	18.0	18.0	15.0	18.0	18.0		
Aug Wk 4	16.5	20.0	13.0		18.5	18.0	15.5
Aug Wk 5	16.5	17.0					
Sep Wk 1	15.5	15.5	14.0	15.5	18.5	18.5	15.0
Sep Wk 2		14.0			16.5		
Sep Wk 3					15.0	18.0	
Sep Wk 4							
Readers	George	Nancy	D&J	Sherry	Ken	Susan	Cheryl
"====>	Klacan	Ellsworth	Koewler	Miner	Zimmer	Lick	Adams

### 2005 WCOLA SECCHI NORTH HALF



### 2005 WCOLA SECCHI SOUTH HALF



## 1873 WABANA CHAIN HISTORY

*Here is the historical narrative that I promised in the last issue of The Chain Letter. This is great! I had no idea that there were written records that go back this far. It seems likely that this is not just about "Wabana Lake", but is about all of the Chain, since we were probably then a single lake, at least part of the time. For instance, we know that in the early days, a steamboat could go all the way from the Wabana Hotel to Martins at the north end of Trout Lake. We start this narrative with:*

### LETTER FROM BILL BERG

On August 6, 2005, I addressed the annual meeting of the Trout Lake Association (Coleraine), and while there I met Mr. David Hartley and his daughter, Jane Kingston. David Hartley is the Grandson of Guilford Hartley, one of northern Minnesota's historic and most prominent businessmen, and the founder of legendary places like the Hartley Sugar Bush on Trout Lake (Coleraine), the Wolf Lake Camp (now owned by Jack Rajala), and the old Island Farm on Hwy. 2. Mrs. Kingston was gracious to provide me with a copy of Guilford's unpublished writings, an excerpt of which follows. The year is about 1873. --Bill Berg—

### **EXCERPT FROM THE LIFE AND TIMES OF GUILFORD GRAHAM HARTLEY, 1853-1922**

(Unpublished manuscript, courtesy of Jane Kingston)

"Wabana", said Mr. Hartley, "is quite a large lake that lies in Itasca County about twelve miles north of Grand Rapids. It is a fine body of water with irregular shores and around it were especially valuable pine forests and some of the best Norway in the state. It is named, as is the post office near it on the south, for Chief Wabana of a band of Chippewas, one of the most admirable and dependable Indians I have ever known.

"The lake was believed by himself and his people to be the border of the spirit land. Because of certain incidents, the superstition had grown and become fixed that all the region to the North, East and West was ruled by Windigo and his evil spirits that were hostile to them and that all who ventured to invade it would be killed. Two of Wabana's own sons who had trespassed in that region had not returned; they had been lost or capsized in their canoe. Probably because of this belief, the furbearing animals there had multiplied until they became unusually numerous.

"One winter we had our camp on an outlet of the Prairie River east of the lake. The fur animals were so plentiful and the certain harvest of furs so great, that I was tempted to invite Wabana to come up and take advantage of it. With some misgivings, he came with his whole family including his daughter and grandson. They camped just across the creek from our camp. They had great success and gathered a large stock of furs. But one day the old chief overworked digging out a black fox, caught a cold and that night, about midnight, his grandson came to my bunk, grabbed me and, as I woke, told me the evil spirits were killing his grandfather. I put on my stays and hurried over to his wigwam. The dogs were howling and the women lamenting. I found that Wabana, in his death throes, had writhed until his feet were in the fire. I pulled him back, felt of his body, and satisfied myself that he was dead.

"It was a gruesome sight in the dim light and smoke of the wigwam. I straightened his body, closed his gaping mouth and glaring eyes and busied the women preparing for his burial. They stopped their lamentations and mournful sobbing and the dogs quit barking. He was clothed as fitted his rank with new leggings, a shroud of scarlet flannel and all the showy trappings of Indian Chieftanship. The wigwam was then pulled down over him to keep the wild animals from disturbing the body and the next day before dawn I saw the flat train hauled by dogs and loaded with children and furs headed for their island home on Wabana Lake.

"The following Sunday, Anne Hasty made a coffin from a sled box and placed the body into it and put it on top of an ox hovel, where it remained until next spring. A band of Indians with a chief came over from White Oak Point to bury the body. They made great noise, as they came up the road with bells and whistles and tom-toms to drive evil spirits away. We set out a feast for them at the camp. They spent a few minutes, half-burying the body, but we later moved it by bateau down to the junction of Clearwater and Prairie River, where we buried it below frost."

# **IMPORTANT SYMPOSIUM**

**APRIL 20  
7:00 P. M.  
DAVIES HALL,  
ITASCA COMMUNITY COLLEGE CAMPUS**

**"Fish, Weeds and Water"  
A Delicate Balance"**

**THE PUBLIC IS INVITED  
YOU ARE STRONGLY URGED TO ATTEND.**

The three speakers are

- Jeff Sundin from the Northern Minnesota League of Guides,
- Nancy Lange from the Izaak Walton League addressing mercury and fish consumption, and
- Dan Swanson a biologist who will tie together aquatic and shoreline vegetation and the interactions with maintaining clean water.

This is the first public collaboration of the three organizations, ICOLA, IKES and NMLG. The public is invited to attend.

THE CHAIN LETTER OF THE  
WABANA CHAIN OF LAKES ASSOCIATION  
Jean Koewler, Treasurer  
32040 Wakeman Bay Trail  
Grand Rapids, MN 55744