

**Marv Hunsaker, White Ash Lake, Polk County**

*Have you noticed a change in water quality and aquatic plants in the last 20 years?*

Oh yes. Our lake is considered a flowage because the upper river starts northeast of us, and we don't know exactly what's coming in, and it's changed the structure of the lake. People don't quite understand exactly what happens, but the river does flow by two cattle feed lots. That's been the changes. We were the 6<sup>th</sup> cabin on the lake in 1952, and back then it was very nice. Our weeds were wild rice. It's changed, because of the 167 cabins on both lakes. Especially in the last 20 years or so. In the 1800s our lake used to be 39 feet deep, and they used it to float logs down for lumber. Now it's only 9 feet deep, so that would be a little difficult. Our weed harvester is really getting used. If we didn't have one, we'd be able to walk across the lake on weeds.

*How do you use the data that you collect?*

The data was sent into Madison WI to Jennifer Filbert. We use reports at our lake association meeting.

*Why did you decide to monitor water clarity?*

They asked for volunteers, and I do a lot of volunteer work. I thought it'd be very important. At that time we just did Secchi disc readings, and then we took classes with Spooner for water chemistry so we started that. I do a lot of volunteer work.

*What are some of the highlights that you have seen on your lake in the last 20 years?*

Just watching the animals, the loons coming and going. Nothing life-threatening. It's fun to watch to see the changes from spring to fall. It's quiet.

*What are some of the disappointments?*

The expansion of the weeds over the years, that's what really disappointed me. The activity on the lake with the overgrowth of jet skis and huge boats, way too big for that small lake. We did have an opportunity to put in a restriction, we had to put it in because it got too dangerous and the shore erosion got too much. We had a lot of shore erosion – we lost about 7 feet from 1952 to the present. It gets dangerous sometimes out on the lake, and invariably some people have a bit too many beers. For a small lake that can get dangerous.

*What accounts for your longevity as a volunteer?*

I enjoyed it, seeing the changes and the work we did helped us with grants and other things with the DNR, which we appreciate. We've had good people that we've worked with there, Jennifer Filbert – she was very helpful when the computer didn't want to talk to me.

*Do you have anything else that you would like other citizen lake monitors or people on your lake to know about you?*

The person that picked up the work is Pat Mahoney, we've got a pretty good group of people up there. I kinda miss [volunteering], but other things came up.

**Rod Olson, Lake Desair, Barron County**

*We were unable to reach Mr. Olson.*

**Tom Rulseh, McDonald Lake, Vilas County**

*Have you noticed a change in water quality and aquatic plants in the last 20 years?*

Nothing consistent, it's been pretty steady. This is in the results over the years. I started out with just the Secchi disc, and started phosphorous and chlor-a a few years ago, and everything's been consistent with some seasonal and year to year variability. Last year the chlor were a bit higher than usual, probably from the early thaw. The change in equipment was good. We used a Van Doren initially for temperature, but it was really awkward compared to the thermometer. It's been relatively easy and good to keep tabs on the lake, and we're glad that the WDNR is able to continue this.

*How do you use the data that you collect?*

I give a report at the lake association meeting, on the previous year's data and the recent sampling.

*Why did you decide to monitor water clarity?*

I've always been interested in the environment. I studied physical geography in school, so I've always had an interest in atmosphere, and water. The lake on which our property is a 39 acre seepage lake, and since I started visiting the lake in 1954 there's been quite a bit of development on the lake. There's always a bit of concern with increased development that it could have an adverse effect on the lake quality. So far we've been lucky that everyone has been good about everything.

*What are some of the highlights that you have seen on your lake in the last 20 years?*

I think that the regular monitoring over the years and the reports that I give to the association give awareness of water quality, and so that was a good time.

*What are some of the disappointments?*

I guess overall it's been good. The thing that a lot of people are concerned about is being a seepage lake in an area that's suffered from drought, the lake is quite low. Over the years we've seen the lake rise and fall but it's been low for an unusually long time. I guess the good news is as of this point we are higher than last year. It's up about 9 inches, but it's got a foot or more to go.

*What accounts for your longevity as a volunteer?*

I think sometimes I should be introducing the process to others so that we can continue with it. We'll be trying to introduce our younger association members to the process so it can continue. Recently the town of Cloverland embarked on a qualitative analysis of the 23 lakes here, and I participated in the Cloverland Lakes Committee. It's interesting because some lakes have monitoring and some don't and we're trying to educate everyone on the importance of quality monitoring and management, and it's been interesting. We received support from the DNR to work with Onterra, who mapped out the plants and watershed for each lake. We're using that as a baseline for the future.

*Do you have anything else that you would like other citizen lake monitors or people on your lake to know about you?*

I guess it should be emphasized that it's an interesting and easy thing to do – it's rewarding to go out and see what's going on in the lake and know that the results that you are recording are looked at by professionals and experts – people who are trained to evaluate that sort of thing. You don't need to be a chemist or some kind of a trained expert. You do need to follow a strict protocol but it's really easy to do – easy and fun to do.

**Carol Schumacher, Clark Lake, Door County**

*We were unable to reach Mrs. Schumacher.*

**Bob Strobush, Apple River Flowage, Polk County**

*Have you noticed a change in water quality and aquatic plants in the last 20 years?*

Lot more weeds here, nothing exotic in there yet. Lots of coontail, big islands of it.

*How do you use the data that you collect?*

I make a report at the annual meeting every year at the lake association. They used it last year to get a grant to get a weed cutter.

*Why did you decide to monitor water clarity?*

My wife volunteered me. She said she was going to help. I used to work quality control at Ford Motor, taking samples and so on.

*What are some of the highlights that you have seen on your lake in the last 20 years?*

There's a lot more pontoons and joyriding where it used to be a lot more fishing, now it seems like everyone has a pontoon, and they pile it full of people on the weekends and ride up and down the flowage. There's a few fishing tournaments though. That was why we got a weed cutter for a nice clear path for pontoons. It's kind of a gathering spot here for phosphorous.

*What are some of the disappointments?*

No, I can't think of anything. It's quite good here because of the weeds and there's good muskie, northern, bass. Computer work's gotten a bit of a pain.

*What accounts for your longevity as a volunteer?*

I'm on the river all the time fishing now, so as far as taking samples, just taking it along when I go. And no one else wants to do it either. Most people work that live here and if they retire they wait till they're too old. I took an early retirement.

*Do you have anything else that you would like other citizen lake monitors or people on your lake to know about you?*

I was on the lake association board for a while and I kept getting calls that the water was too high, too low, too many weeds, and it's nice to be free of those responsibilities.

## **Allen and Rosemary Toussaint, Alva and East Horsehead Lake, Oneida County**

*Have you noticed a change in water quality and aquatic plants in the last 20 years?*

Acually, I have not noticed a change in these. Our lake tends to be somewhat infertile, however the changes I have noted is what happened to the bottom of the lake. When we first moved here almost 50 years ago, we had pristine rocks not covered in moss. For the past 17 years or so, I have noticed more moss and sediment on the rocks. We have noticed far more boat traffic. We have giant boats designed to kick up waves, much of the onshore beaches are being eroded. The lake is low. The lake used to be 39 feet and now it's about 33 or 34 feet. A number of years ago I talked to a researcher (maybe UW) was doing a study on the effect of large boats on water bodies, so we over the summer we would do near shore and mid lake measurements and we noticed that the Secchi in near shore areas would be different than without boat traffic and in the middle of the lake. Oen of the big changes is that we have fewer weeds than we used to have. Over the years, they're just gone. When we first came to the lake there was only a resort that had a landing and a very primitive public landing. When we came here there were maybe 16 properties, now we have 90. There are a number of private landings for the big boats, most without permits. Unfortunately some of those were by prime walleye rockbars but now those areas are covered with sediment.

*How do you use the data that you collect?*

We don't have a lake association, it was only distributed to people I talked to on the lake. Great American Dip-In isn't active anymore but we used to share data with that.

*Why did you decide to monitor water clarity?*

Well I think there was an interest in knowing a bit more about the lake. Somebody had been monitoring but no longer did it.

*What are some of the highlights that you have seen on your lake in the last 20 years?*

I'm usually out there alone. I try to get out before there are too many people on the lake. Sometime I share the water space with the resident loons; they seem to appreciate what I'm doing because they don't squawk at me. I'm also a loon monitor. We see eagles and ospreys; it's interesting being out on the lake. It's also interesting seeing the technology change – when we started doing chemistry, we used an oxygen thing that is no longer accepted, but now we have a meter. It's a lot simpler and I don't use as much time out on the lake.

*What are some of the disappointments?*

I sometimes think that there are a lot of people on the lake who don't really care too much about the lake except for recreation. I see people unintentionally harass the loons, or come very close to me. There's upsides though too because people sometimes stop and ask what I'm doing so I get to do some educating.

*What accounts for your longevity as a volunteer?*

I think what I'm doing is important. You want to stay with it and stay with the data. At some time I won't be able to do it, and I hope that we can find someone to take over at some point.

*Do you have anything else that you would like other citizen lake monitors or people on your lake to know about you?*

It's important that this [monitoring] be done and any studying should be continued. I feel like I'm doing something important for the lake and for the people who are interested in the lakes and water quality. Now the data is much more accessible too. I think that's really slick.

## **Bill Green – Myrtle Lake, Vilas County (28 acres, 29 feet maximum depth)**

**Why did you decide to monitor water clarity?**

We love the lake. It is very private and there is no public access. We own about 350 feet of frontage and we really care about the lake and wildlife that lives here. We cruise the lake in our 14 foot electric pontoon almost daily so we want to make sure that we are on top of changes.

**Have you noticed a change in water quality and aquatic plants in the last 20 years?**

It appears that water quality is improving. Water levels have been improving and are higher these past five or six years. No more total winter kills. Aquatic plant densities are increasing and plants are spreading to different parts of the lake.

**What are some of the highlights that you have seen on your lake in the last 20 years?**

We have had loon nesting success many years in a row due to the artificial nesting platform that we made. My neighbor and I pilot our sailboats on nice days – we love it!! There are too many wildlife and aquatic sightings and happy memories to count.

**What are some of the disappointments that you have seen on your lake in the last 20 years?**

We had a loon nest with four eggs all at the same time and not one egg hatched! Twenty years or so ago we had a total lake freeze two years in a row.

**How do you use the data that you collect?**

We share the data with neighbors and other interested folks.

**What accounts for your longevity as a volunteer?**

We love the lake and I enjoy the quiet time spend monitoring. A cold beer helps too!

**And now some pix.....use whatever you like!**









## **Elaine and Dick Gronert – Turtle Lake, Walworth County (140 acres, 35 feet maximum depth)**

### **Why did you decide to monitor water clarity?**

We all care about our lake and because it is deep and clear we are determined to preserve our lake. Turtle Lake has been referred by several people as “The Jewel of South-East Wisconsin”. 90% of our lake floor is carpeted with Chara spp. (a species of algae) – a great deterrent to invasive species.

### **Have you noticed a change in water quality and aquatic plants in the last 20 years?**

Yes, a little. The drought has impacted our lake but the water level is rebounding. A few years back, we noticed a little EWM but we became pro-active in treating it with considerable positive effect. Two years ago we noticed zebra mussels. The DNR has been helpful in dealing with these two lake issues.

### **What are some of the highlights that you have seen on your lake in the past twenty years?**

There have been two times that Elaine and I have recorded a Secchi disk reading of 22 feet!

The DNR purchased 3500 feet of our southeast shoreline which has only two grandfathered homes on the shore. Therefore, we are blessed with semi-private Turtle Lake. This will stifle further development and protect our lake from over use. We have enjoyed working with our friends from the DNR and our Lake Association on issues.

Members of the Lake Association agreed to stop “suburbanizin” their water front and let the shoreline return to its natural condition. This has been successful in reducing the geese population and all the problems associated with that species. The result is that our lake is showing signs of what it used to be before the development invasion (maybe development is another invasive species!!).

### **How do you use the data that you collect?**

We submit an annual report of the data to our lake association members.

### **What accounts for your longevity as a volunteer?**

Elaine and I love our lake front home on a peaceful and pretty lake and we want to keep it this way. Anything we can do to preserve our lake is worth a lot of work by a cooperative Lake Association.

### **What are some of the disappointments that you have seen on your lake in the last 20 years?**

Our water level is affected somewhat by our dam. We have dealt with a breach and some culverts leaking water under Turtle Lake Road...and we have not been successful in fixing this issue after 25 years of trying to get this resolved. We have asked for assistance from the DNR but the problem still exists.

Do you have anything else that you would like other citizen lake monitors or people on your lake to know about you?

Elaine and I have made many friends within the Wisconsin Lakes Partnership!

### **James Hughes – Kathon Lake, Oneida County (189 acres, 15 feet maximum depth)**

Jim Hughes recently retired from CLMN monitoring. He is now 90 years old and he is leaving the monitoring to Denis Boehm. Jim and his wife have been married for 70 years. He is active in many community activities and never slows down.

Why did you decide to monitor water clarity?

With increased use of the lake by property owners, baseline data is important to have. It is good to refer to data in order to make good decisions.

Have you noticed a change in water quality and aquatic plants in the last 20 years?

On a 200 acre lake it is easy to spot changes in water quality. The use of the lake escalates in July and August with heavy horse power motors, water skiing and weed cutting that stirs up the bottom sediment. All of these impact our water clarity.

What changes have you seen on your lake in the last 20 years?

We have had EWM for five years and with that came liquid chemical treatment and the side effects of its use. We hope that the surveys and studies that are required to use the chemical treatment will help those in the future.

What are some of the highlights that you have seen on your lake in the past twenty years?

We have a resident pair of bald eagles that have added an average of two eaglets each year. One year, three eaglets made it to maturity.

How do you use the data that you collect?

Our Lake Association receives this information as does the DNR staff.

What accounts for your longevity?

The lake gives back pleasure both in the summer and winter. With hard water, I cross country ski. Fishing is great!

What are some of the disappointments that you have seen on your lake in the last 20 years?

We are all subject to Mother Nature for fluctuating water levels. It is also disappointing to see the use of lake facilities by Non-paying property owners.

Do you have anything else that you would like other citizen lake monitors or people on your lake to know about you?

At age 90, my Wife and I have been retired for 27 years. I worked for 42 years as an Industrial Architect and have been married for 70 years. I am a volunteer at the Children's Museum and have been doing that for sixteen years. Life is good.

## **Paul Mahlberg – Kangaroo Lake, Door County (1123 acres, maximum depth 12 feet)**

Paul's parents' home was in Milwaukee; his mother brought him to the cottage on Kangaroo Lake for the entire summer from an early age (~2 years old) until early high school whereupon my parents allowed him to reside there alone during the summers of his last few years in high school. During the summers at the lake he learned whatever he could about the lake, travelled throughout the lake, collected insects and various other things, hiked the many interesting areas around the lake and community and read numerous books on biology and science extensively.

His parents visited on weekends to see how he was coming along. After high school (1946) he enrolled in the University of Wisconsin and completed his B.S. degree in Botany. He also completed a M.S. in teaching biology and decided to pursue a Ph.D. He completed that at the University of California, Berkeley. Professionally he was away from Wisconsin, and visited here with his family for short periods until the 1980's. He kept an interest in what was happening with the lake through childhood friends who knew the lake well. My wife and I finally moved here full time in 2004.

### **Have you noticed a change in water quality and aquatic plants in the last 20 years?**

Yes. Algae have become more abundant in the lake. It was clearer in earlier years. During late summer (August) of many years water clarity can decrease to secchi readings of 3 feet. There has been an extensive loss of submerged native aquatic plants and the introduction of invasive Eurasian water-milfoil (EWM). Extensive areas (many acres) of bulrushes have disappeared.

Kangaroo Lake is relatively large but very shallow (6-ft average). It is 3 miles long x 1 mile wide. It is divided by Cty Road E as a causeway into a nearly pristine essentially undeveloped 300-acre north end (now protected from motorboats) and a well developed south lobe of 900+ acres. Peil Creek provides water inflow into the north end of the lake. Water outflow occurs in the south lobe via Heins Creek.

In the south lobe, we have lost many native aquatic plants in the central area of the lake and many acres of hard-stem bulrushes along shore areas, in open water areas and near/on reefs. In contrast, on the north end, north of causeway where there is no boat traffic, hard-stem bulrushes are very abundant and growing well.

We have recorded motorized boats cutting off bulrushes in several large areas and have instituted a slow-no-wake zone (established 2000) for one area of the lake. There has been no recovery of bulrushes as of yet at the south end. Native aquatic plants in various areas of our lake have been replaced by EWM. I reported EWM in Kangaroo Lake to the DNR in the 1980s.

There has been a slight increase in average trophic state index in the south lobe during the past 20 years, but it remains just below the 50% class and the lake is described as mesotrophic. Similarly for secchi disc averages. There has been a decrease in reading

level, from 7 feet in the late 1990s to the more recent averages of 4 and 5 feet. I take my readings on a quiet day, and it is preceded by at least one quiet day, to minimize the presence of suspended sediments in the water column. Thus, these readings reflect increased abundance of suspended algae in the water.

#### [How do you use the data that you collect?](#)

Before we could use these data, or even begin to collect them, we were aware that something had to be done to bring some cohesiveness to the membership around the lake, as well as study the water quality of the lake.

We began to develop a lake management plan with the help of a grant from the DNR. Our Comprehensive Lake Management Plan was completed (2004). We have used it to pursue several programs to improve, or attempt to improve, the water quality, of our lake.

We did a bulrush replanting experiment in an area of shallow water where they formerly grew in an effort to replace those lost to unknown causes. Several thousand seedlings were planted. However, it was unsuccessful for perhaps several reasons including a subsequent drought that year, and all seedlings in the fall and winter were dry and exposed to freezing winter conditions.

We have installed 31 large log cribs in the lake to provide habitat for fish and other organisms in an effort to improve water quality for fish. These cribs are 8 ft x 6 ft x 3.5 ft high and follow the construction plans recommended by the DNR. They were installed in 2002-2003, and placed in locations with 9 feet of water. Fishing has improved as a result of their installation. Native plants as well as EWM have grown in and around the cribs.

We have studied several aspects of the EWM in our lake, including the potential application of the weevil to fight the infestation--the weevils were not able to survive and, as a result, we have not pursued this approach any further. We monitor the distribution and review the spread of EWM by biennial sampling of EWM and other aquatic plants at 530 GPS sites (grid points) on the lake. The monitoring program is directed to determining the pace at which EWM is spreading in the lake, and whether it will become a major threat to the overall biology and water quality of the lake. The original sites of EWM infestation are not enlarging rapidly, although they did displace the original native aquatic plants at those locations. Also, we have found that all the cribs have become new sites for EWM, including in areas of the lake where EWM was not previously present. So in that sense, which is real, EWM continues to spread significantly in the lake. Data from the last three sampling collections representing 2006, 2008 and 2010 are currently being reviewed and plotted for study and evaluation. They will be used for planning our next steps for studying EWM.

EWM is a threat to Kangaroo Lake in that it can spread widely into the north end and adversely affect the water quality of that nearly pristine area. At present I have found it along the north side of the causeway (ie, part of the north end). It enters through four culverts under the causeway. EWM also grows adjacent to these culverts in the south

lobe of the lake. There is sufficient flow of water through the culverts from the south lobe to the north lobe to carry EWM fragments into the north end. As a result EWM does grow along the side of the causeway in the north end. We are now periodically treating both sides of the causeway with chemicals to kill the EWM. Thus far, EWM has not spread into other areas of the north end. Our studies of EWM are on-going and will extend into the future.

We monitor precipitation for our 6,000-acre watershed with the help of a weather-spotter in Baileys Harbor who records daily precipitation for the adjacent Baileys Harbor watershed. We now have over 13 years of these data. They help us view and compare seasonal precipitation patterns as they affect the water level of Kangaroo Lake.

We are studying ice phenology on the lake for which we now have 13 years of data related to ice-on, ice-off and ice-duration events. These data, in the long term, can contribute to the interpretation of possible trends in local seasonal changes. Because we are adjacent to Lake Michigan--about 1 mile away--it undoubtedly impacts our microclimate around Kangaroo Lake and reflects more probably the 'climate' of Lake Michigan. This inference may be rather interesting in that if we compare our ice phenology with that of some other lakes well inland in the state we may be able to detect microclimate differences between a Lake Michigan-effect compared to the bases employed to interpret the microclimate effects occurring more central or in western regions of our state or adjacent states.

To gain a historical perspective of the lake, Paul Garrison (DNR) performed a core analysis of the lake bottom in 2007. The core length represents an historic profile of lake history with the top layers being the present period, and a lower sample (represented by sediment colors) representing periods 120 and more years ago. A distinct band represents the time of settlement and when timber cutting occurred around Kangaroo Lake in that it includes soil sediment that washed into the lake during the timbering period. In this study (we had no grant funds) Dr. Garrison provided an analysis of two layers: a very recent one, and a second one representing about 120 or so years ago. Preserved diatom 'shells' are used to interpret potential changes in lake nutrient conditions. The kinds of diatoms (species) differ in water of different nutrient composition.

Analyses of the diatom community in these two different strata indicate that the present condition (2007) reflects a moderate increase in nutrients compared to that over 120 years ago, and that the present conditions indicate a significant loss of the vascular plant community compared with that of over 120 years ago. This loss could have occurred any time throughout the period, even very recently, or at some other pace. We observe such a loss as related to motorcraft traffic on the lake as we mention elsewhere in this report, and as we can observe in aerial photographs covering the period. This period would be on the order of 30 or so years and within the time-frame of Dr. Garrison's analysis.

We are interested in expanding this study of lake cores to profile when significant changes in the vascular plant community began to occur--comparing composition in 20 year increments, or other that Dr. Garrison can use, to expand the analyses and increase

our understanding of the loss of native plants. Other features that are preserved over time--fish bones, plant remains--can be incorporated into such a study

#### Why did you decide to monitor water clarity?

I've known this lake since the 1930s during which time I spent my summers at the lake. During that period the lake was a clear-water lake. I wanted to understand why, now in the late 1980's and to the present time, this lake is no longer clear. Rather, it now contains an abundance of green floating algae that color it green during the spring and summer.

It is interesting to note that water clarity improves in fall when the water temperature decreases to below 60° F. The water clears with that decrease in temperature, and remains clear all winter, and, until ice-off. Perhaps the algae die and drop to the lake bottom (this should be demonstrated). Within a few weeks after ice-off, as the water warms into the 50s and above, the algae begin to reappear. We can attribute the abundance of floating algae to excess nutrients, including phosphorus, in the water. Yet Kangaroo Lake contains a relatively low level of phosphorus compared to other lakes in southeastern Wisconsin. I am wondering if there is some association between the introduction of EWM and the introduction of associated ('new') algal strains that are now proliferating more rapidly than old 'native' floating species of algae.

#### What are some of the highlights that you have seen on your lake in the last 20 years?

We have been successful in attracting over 70% of residents around the lake to become members of our Association. The majority of our stakeholders will support us in our efforts to study and implement changes for the lake. We have learned from our surveys that a majority, about 70% of membership, like the Newsletter and also our Education Papers. Most members tell us that they support what we are doing for the biology and ecology of the lake.

Members have contributed financially and in time to carry on our activities. Their contributions, as well as funds from DNR grants made it possible to build the cribs and install them in the lake. Also for the bulrush replanting program members contributed their time to help plant the seedlings in the experiment. Members also assist in putting in and taking out the marking buoys delimiting the slow no-wake area at the south end of the lake. Likewise, members help in the survey of EWM and to clear the dam of debris during the year to avoid potential flooding of adjacent areas.

Currently we are developing a webpage (not yet complete), and some members are actively contributing time to its development. [www.kangaroolake.org](http://www.kangaroolake.org)

What are some of the disappointments that you have seen on your lake in the last twenty years?

Recall the average depth of our lake is only 6 feet. The deepest spot, a small area, is 12 feet deep. We've noted that the Sturgeon Bay YMCA swimming pool is 13 feet deep! Their pool is deeper than Kangaroo Lake!

I have seen the tremendous increase of very large outboard and inboard motorcraft on this lake. We have about 200 stakeholders owning shoreline property. Some own these large powerful motorized boats, as well as personal watercraft.

Kangaroo Lake is the only lake on the peninsula that has the greatest number of signs pointing the way to the boat ramp. We, therefore, have Lake Michigan-sized boats with high horse-power motors that come to Kangaroo Lake. They may not stay too long, but even five or six circles around the perimeter of this shallow lake have a detrimental effect on the organisms and biology of the lake bottom.

Last year I talked to a family in Sturgeon Bay who had just arrive here for vacation. They trailered a 4-seater personal water craft (rated at 65 MPH). When I asked where he planned to use it, he responded, "Lake Green Bay", and added that it was so powerful that he has not yet 'opened it up' because he was actually 'afraid to do so'. What worries me with such boats is that when people try them on the waves and swells, and wind, of Lakes Michigan and Green Bay, they will soon realize that they can come to the quiet and placid water of Kangaroo Lake where they can really 'open up' the power of their boats. I worry about how the lake biology will be affected by these boats. And we must realize that motors and boats of all kinds are getting larger and larger every year!

We have seen the damage that inland boats (the people) have done to our bulrush areas where they have indiscriminately motored through them (to this day) resulting in the loss of the bulrushes. We have observed the damage and destruction these high-speed motors and their hull-wash has done to aquatic plant weed beds in the lake--pondweeds, bladderwort, naiads.

We are disappointed in that the state legislature and state agencies seem unwilling to take actions that would adequately protect our Wisconsin lakes.

#### [What accounts for your longevity as a volunteer?](#)

I remain interested in working to improve/maintain the biology and water quality of Kangaroo Lake. This is a beautiful lake, and I wish to keep it so into the distant future.

#### [Do you have anything else that you would like other citizen lake monitors or people on your lake to know about you?](#)

Yes, we are heartened when we learn that other stakeholders express their appreciation for what we are doing for the lake. My own interest in the lake from my youth was and is complemented with the efforts of my wife, Marilyn, when we became very active here from the late 1980s.

Marilyn and I did a host of things to reinvigorate our stakeholders around the lake to encourage their interest in the lake. We reorganized the defunct association as the Kangaroo Lake Association with a new Constitution and By-Laws. We worked with The Nature Conservancy and the Door County Land Trust, both relatively 'new' in the county--back in the early 1980s. Both organizations recognized that the lands around the lake



were of great ecological value, and wanted the new Kangaroo Lake Association to work with them to protect these important lands around the lake. We joined with them and encouraged stakeholders to assist in all ways possible. Early on from that beginning these organizations have helped to protect hundreds of acres around our lake, and thus stimulated a tremendous interest to protect endangered land critical to the ecology and overall biological well-being of the lake.

In all our lake activities, Marilyn has performed a major role. She continues as Secretary of the Association and has been a major organizer of Association activities. Her artistic talent appears throughout her work as evident even on our new website.

What recommendations have you derived from your water quality studies?

My longtime experience and observations on the trends in the biology and water quality of Kangaroo Lake prompt me to make the following recommendations that are applicable to the lakes in Wisconsin.

I am aware that local governments have jurisdiction over a lake in its district, and can control activities on a lake. However, such government bodies are typically unwilling or unable to do so because of the costs of potential lawsuits concerning boating activities.

I am also aware that a lake group can organize a taxing and governing Lake District that can regulate boats and motors, and all other governmental functions for people and properties in the district. However, this approach is impractical for nearly all lake groups. Further, they too remain subject to lawsuits concerning boating activities.

Thus, the appropriate approach is for the state legislature to formulate policies governing motor and boat size on state lakes. I suggest that the DNR begin and complete a one year study to establish criteria to classify or categorize lakes in Wisconsin by:

- a. Lake size, acreage.
- b. Average lake depth.
- c. Shallow character of the lake.
- d. Maximum depth.

Upon completing the classification of each lake, start a two-year study to determine the impact of the various watercraft upon each of the lake categories.

Recommend the use or non-use of horsepower (HP). Recommend the horsepower size of outboard watercraft, personal watercraft (PWC) and inboard/outboard (IB/OB) watercraft for each lake category.

An appropriate agency should then meet with the Wisconsin State Legislature to discuss these findings and consider appropriate legislation to halt further degradation of Wisconsin lakes.

## **Pat McKearn – Two Island Lake, Chippewa Co. (29 acres, 18 feet maximum depth)**

### **Why did you decide to monitor water clarity?**

The water quality was unbelievably pristine when we bought our land, and because we wanted to build several years later, we were happy to have a way to track any water quality changes. We had been involved in lake water quality concerns at another lake previously, so it was a natural thing to take on. We are very protective of this special lake, and wanted every tool we could think of to keep it that way.

### **Have you noticed a change in water quality and aquatic plants in the last 20 years?**

What changes have you seen on your lake in the last 20 years?

There used to be two homes on the lake – one was seasonal and one was permanent. Now there are five permanent homes. On a lake this size, that is a huge change.

We have extreme water level variations but for the past 7 years we have had consistently low water levels.

A no-gas-motor ordinance was passed and has changed the atmosphere and lake use dramatically.

### **How do you use the data that you collect?**

We used the data when we were working on the no-gas-motor ordinance. We also have used the data to keep the county from weakening lot size rules. We have also used the data with new neighbors to help them better understand water quality issues.

### **What are some of the highlights that you have seen on your lake in the last 20 years?**

Beginning of regular loon nesting attempts and even two years of hatches and fledgling successes!

A uniquely robust quantity and variety of dragonfly populations.

Successful efforts to thwart subdivision and protect most of the shoreline in its natural state.

All landowners share a common strong commitment to protect the lake and the non-riparian users consistently seem to value the unique and peaceful experience and respect it.

Despite reduced clarity and lower water levels, the lake water quality remains amazingly high and we are rewarded each time we get into the water to swim.

### **What are some of the disappointments that you have seen on your lake in the last 20 years?**

Repeated challenges to the no-gas-motor ordinance.

An attempt to subdivide into many substandard size lots

Repeated otter predation on loon eggs.

Consistent and extremely low recent water levels.

What accounts for your longevity as a volunteer?

My husband, Richard Smith, and I work together as a team. Monitoring water quality is a tangible way of helping to protect our lake and it's rewarding to look back at the records as they accumulate over many years.

The annual personal visit from the lake monitoring specialist is a key reinforcement. This visit rekindles enthusiasm and helps to solve problems and answer questions!

Do you have anything else that you would like other citizen lake monitors or people on your lake to know about you?

We started water chemistry monitoring in 2006. The addition of a no-gas-motor ordinance has had a huge impact on the water quality. I think that because of good water quality, people are respectful of the lake and other users and there are rarely any use conflicts.

### **Russel Schaffenberg – Deer Lake, Burnett County (157 acres, 23 feet maximum depth)**

Why did you decide to monitor water clarity?

I was among the lake residents who met in the early 1990's to form an association, and to participate in the DNR lake monitoring program was an important goal of ours. Since I was an Analytical Chemist with a career in water quality, I was a good fit for this job.

Have you noticed a change in water quality and aquatic plants in the last 20 years?

Thankfully, water monitoring data has remained within the "normal" range of variation over the past 20 years. We have a highly diverse flora in our lake with no noticeable changes and no sightings of aquatic invasive species.

What changes have you seen on your lake in the last 20 years?

More people and more boat traffic.

How do you use the data that you collect?

To try to answer the question of water quality trends over time.

What are some of the good things that you have seen on your lake in the last 20 years?

The volunteers who keep our association and its mission going from year to year are an inspiration, and are the glue that binds us together as a community of people who want to protect the quality of Deer Lake's water quality, flora and fauna. We always have a big turnout for our ice cream social on the 4th of July.

What are some of the disappointments that you have seen on your lake in the last 20 years?

More noise. High speed boating would not be a problem if they stayed as far from shore as possible, and avoided early and late hours. Most do, but some people have a bad habit of hugging the shoreline, which magnifies the noise on shore, harms plants and stirs up sediment, and they sometimes go back and forth in the same spot all day. One hundred

feet may be legal but high speed boaters should try to minimize the noise they put on others by staying as far from shore as possible.

A new phenomenon that didn't really exist 20 years ago is irresponsible gunfire, where people buy large quantities of ammo and just blow it, hundreds of rounds at a time using high capacity magazines. Although the homes are often quite close together, it is apparently legal to shoot anywhere up here, and some people feel they must shoot right in their back yards, rather than taking it far away from the lake. We have endless public land nearby where they could go. The sound of gunfire carries for miles, echoes across the lake is unnerving to some. People don't mind fireworks, most enjoy it, but everyone hates this type of high-volume gunfire, especially near the lake, and they have concerns about safety.

[What accounts for your longevity as a volunteer?](#)

I am still here and able. To gather the data is, and will continue to be, as important as ever.

### **[Thomas Schuler – Thunder Lake, Marinette County \(135 acres, 62 feet maximum depth\)](#)**

Tom remembers scrubbing his Dad's back with soap while they bathed in the lake and coming back from fishing with a net full of pan fish the size of his hand or bigger. He said that when they were kids they thought nothing of swallowing lake water. There was no talk of invasive species – they never heard of anything that would be harmful to the lake. Times have changed.

Year round homes are now common on the lake and the lake population tripled with activity. The public landing now gets heavy traffic. Almost everyone has a pontoon boat and speed boats and ski jets are popular.

[Why did you decide to monitor water clarity?](#)

I wanted to be a part of the water quality program. I remember how the water was back then and how it is now. Property owners who are new to Thunder Lake think our water is very clean. They are right if you compare it to other lakes of today but water quality used to be tremendous. I come up north to get away from the city. Some leave the city and bring it to the lake – they have “Better Homes and Garden” yards – all the way to the water's edge.

[Have you noticed a change in water quality and aquatic plants in the last 20 years?](#)

Since the mid 80's, I have been talking to lake residents about the importance of not having a lawn to the water's edge. Restoring the shoreland back to natural vegetation is sometimes a tough sell. There are still a handful of cottages on the lake that don't have updated septic systems. There are more nutrients in the lake and that leads to more aquatic plant growth.

[What changes have you seen on your lake in the last 20 years?](#)

Boat traffic is much greater – almost everyone has a pontoon boat and a speed boat. We used to have plenty of pan fish under our boat lift, but not anymore. I practice Catch and Release and hope that others on the lake will follow that example. We are lucky on Thunder Lake – there is an inlet and an outlet. There are numerous springs also.

[How do you use the data that you collect?](#)

I share the data with members of our lake group. The data is available to everyone on the CLMN web site.

[What are some of the disappointments that you have seen on your lake in the last 20 years?](#)

My goal is to get everyone to participate in a shoreland restoration project. I don't know how to do this. I would like to see more interest from our lake neighbors in protecting the shoreland and restoring native vegetation.

[Do you have anything else that you would like other citizen lake monitors or people on your lake to know about you?](#)

Do everything within your power to protect our lakes – both the shoreland and the water.