



Friends of Lake Kegonsa Society, Inc.  
P.O. Box 173  
Stoughton, WI 53589-0173  
**June/July 2015**

**President’s Message ~ Peter Foy**

Your FOLKS Board has had a very busy spring and are excited to inform you about some of the projects that we are involved in that are discussed in this newsletter. Various members of the Board have attended numerous meeting and informational sessions regarding lake quality in an effort to understand what others are doing and to identify actions we can take to impact our lake. I am also on the Clean Lakes Alliance (CLA) Community Board, so we are working closely with the CLA, as well as the County, Department of Natural Resources and the UW Limnology Department.

The FOLKS Board is about to undertake the most expensive and time consuming project we have been involved in since we were founded 27 years ago. The article below describes the major carp removal project that we have been exploring for the last few months and will be ready to start in the coming months.

As always we encourage you to ask any questions you have about information you see in the Newsletter articles.



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## **Save The Date – August 18**

FOLKS 3rd annual summer fling will be held Saturday, August 18 at Stoughton Country Club from 6 pm to 9 pm. Come meet your lake neighbors and enjoy the beautiful sunset from the club's patio.

This year we are looking for Lake Kegonsa memorabilia to display. Contact Cathie Taylor at 838-2470 if you have something historical, interesting or fun about Lake Kegonsa.

More information will be sent later this summer.

### **Bob Arndt**

FOLKS is saddened by the passing of Robert "Bob" Arndt on June 6, 2015, at the age of 72. He served as FOLKS President from 2009 to 2012 and was a long-time FOLKS Board member. He is preceded in death by his wife, Connie and survived by many loving family and friends.



## Yahara Pride Farms Tour

Each year Yahara Pride Farms hosts a tour at one of their member farms that features the farm's history as well as their operations and phosphorous-reduction processes. This year's tour was held at the Ziegler Dairy Farm and the Gunderson Health System Manure Digester in Middleton and was supported in part by the Clean Lake Alliance.

You may wonder why Gunderson Health Systems, which is located in La Crosse, WI is operating a digester in Dane County. They are committed to being energy independent and found that Dane County was more aggressive than the La Crosse municipality in the area of waste conversion. As a result, Gunderson Health System and Dane County are partnering with three family farms in Dane County on the GL Dairy Biogas Project. The project offsets about 14 percent of Gunderson's energy needs, bringing the health system one step closer to its energy independence goal. This project serves Blue Star Dairy, Hensen Brothers Farm and Ziegler Farm, all located just outside Middleton WI. A total of more than 2,000 cows provide manure for the project.

We had the opportunity to follow the process from the time the manure reaches the digester to the end product of electricity and a clean, organic fiber product for horticultural uses. The GL Biogas Project uses a digester and generator to create energy. Cow manure from the three farms is processed in three air-tight digester tanks. The tanks are heated to about 100 degrees - just like a cow's stomach. Bacteria in manure thrive in these conditions and they consume solids in the manure while releasing methane gas.

Instead of being released into the atmosphere, the methane is captured at the top of the digester and burned in a generator to create electricity. The excess heat from the generator warms the digester. The digester operation is expected to generate about 16 million kilowatt hours of electricity annually. The electricity is added to the local grid in Dane County through Madison Gas and Electricity, enough to power approximately 2,500 homes and reduces fossil fuel carbon dioxide by 11,000 metric tons per year.

Most important to lake owners and users, the digesters prevent more than 3,700 pounds of phosphorus runoff to the water ways in Dane County every year. Phosphorous is the leading cause of green algae and other weed growth n Dane County's lakes. It is estimated that 370,000 pounds of algae will be reduced annually in the Yahara watershed as a result of this project.

At our annual meeting in January, there was a discussion about the safety of the digesters. Based on what we observed, there are an abundance of check points throughout the process to insure there is no leakage into the Yahara watershed. In addition there is huge berm built around the facility should an accident occur.

For more information on this, check out the Yahara Pride Farm website.



# Interesting information about Phosphorus coming into the Lower Lakes

## By Peter Foy

On May 14, I attended a presentation by Dr. Corry McDonald, a research Limnologist at the WDNR Bureau of Science Services. His talk was titled, "When and Where; Seasonality in Sources of Phosphorus in the Yahara River Watershed". As you know the Yahara Lakes are a chain of unique but interconnected surface waters. Because the lower lakes (Waubesa and Kegonsa) receive most of their phosphorus from upstream watersheds via the Yahara River, the focus has been on source control in these upper watershed reaches.

However, based on Dr. McDonald's research, there is new evidence suggesting that more localized; subwatershed sources may play a surprisingly large role in regulating summertime water quality in Lake Waubesa and Lake Kegonsa. New research also reveals interesting relationships between wetlands and phosphorus loading to the lakes that could help guide future management strategies, particularly in our lakes further down the chain, like Lake Wingra and Lake Kegonsa.

His presentation was focused on Lake Waubesa, but most of his findings would also apply to Lake Kegonsa. Some of the main points he made that might be of interest to FOLKS members were:

- Total Phosphorus (TP) loads into Lake Waubesa due to upstream input was only 38% in the summer, but it was 85% the rest of the year. The other 62% in the summer was due to runoff from the watershed around the lake.
- TP loading from the Waubesa watershed was directly related to high rain events.
- The amount of time it takes to flush the water in the Yahara Lakes varies greatly. Because of this, it is important to look at phosphorus loading on a seasonal basis for Lake Waubesa and Lake Kegonsa.:
  - o Lake Mendota has a flushing rate of every 4.4 years
  - o Lake Monona is 1.1 years
  - o Lake Waubesa is 0.2 of a year
  - o Lake Kegonsa is 0.3 of a year.
- What is thermal stratification and why does it matter?

The thermal stratification of a lake refers to a change in the temperature at different depths in the lake and is due to the change in water's density with temperatures being warmer on the top and cooler towards the bottom. The deeper the lake the more it stratifies. Lake Mendota and Lake Monona stratify because of their depth. Lake Waubesa and Lake Kegonsa do not stratify.

What is interesting about this is that due in part to this stratification, phosphorus concentrations decrease in the warmer surface waters of Lake Monona during the summer. Then because of this the surface water going out of Lake Monona into the Yahara River, during the summer, has lower levels of phosphorus going down the river and into Lake Waubesa. This is why reducing phosphorus from the watershed around the lake would have a larger impact on water quality than previously believed.

# Interesting information about Phosphorus coming into the Lower Lakes By Peter Foy (Continued From Page 4)

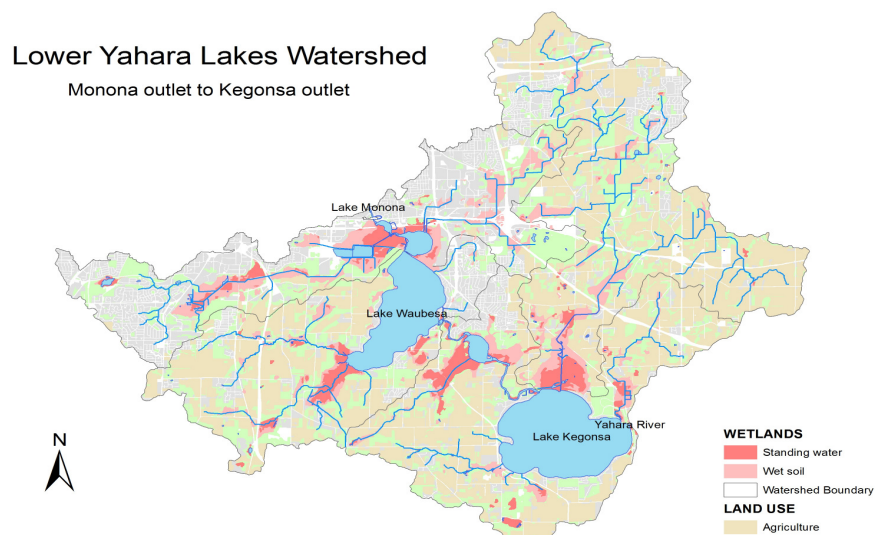
## Summary:

- Summer nutrient loads from local watersheds are a major driver of Water Quality in the lower Yahara Lakes
  - Phosphorus load was actually greater than upstream loads, during the summer
  - This is good news for the Water Quality outlook in Waubesa/Kegonsa because it provides other important areas to monitor and control phosphorus than just the Yahara River.
- Some wetland systems may be exporting large amounts of dissolved phosphorus during high-flow events in summer
  - Wetlands are abundant in the Waubesa/Kegonsa watersheds and their impact on water quality need to be better understood, particularly during heavy rain periods. It appears it could have a larger impact than previously believed.

Tom McGinnis and I also met with Dr. McDonald to explore how his research might be used to help us impact the water quality of Lake Kegonsa. We identified a number of new projects that the FOLKS Board can consider getting involved in.

We were happy to see that there is scientific research being conducted on the lower lakes, as most of the research effort is focused on Lake Mendota and Lake Monona. Any work being done on any of the Yahara lakes benefits us, but we like to concentrate our efforts on areas of direct runoff into Lake Kegonsa.

The map below shows the Lower Yahara Lakes Watershed that we are concerned about. You can see the huge watershed we are talking about. And if you can make out the small blue rivers and creeks that flow into Lake Kegonsa you will be surprised by how many there are.



# **FOLKS Carp Removal Project**

## **Benefit of removing carp from the lake.**

Carp are bottom feeders that constantly stir up sediments as they forage for food. As a result of this feeding activity, bottom sediments are kept “fluffy” so that in shallow lakes the sediments are easily resuspended on windy days. This process along with the excretion of nutrients by the carp leads to increased nutrient recycling that fuels the growth of blue-green algae in summer. Thus, shallow lakes, like Lake Kegonsa, with dense populations of carp normally have very poor water clarity from the resuspended sediments and algae blooms. Aquatic plant growth important as fish habitat is also limited by the lack of light penetrating below the water surface.

It has been demonstrated in other lakes, such as like Lake Wingra in Madison, that removing carp can have the following benefits.

- Water clarity improves- Carp contribute to poor water quality by uprooting vegetation and stirring up bottom sediments during feeding, leading to increased water turbidity as well as enhanced nutrient recycling that promotes the growth of algae.
- Native aquatic plant growth increases.- Carp have significant direct effects on native aquatic plants both through direct grazing and through uprooting plants while feeding, as well as indirect effects from increased water turbidity that limits plant growth.
- Invasive aquatic plant growth of Eurasian Water Milfoil (EWM), because of its ability to propagate rapidly from vegetative cuttings, will initially spread to new areas in response to the clearer water. However, experience indicates the slower growing native aquatic plants will eventually expand their coverage and limit the growth of the invasive EWM.
- Fish populations improve- Carp are known to consume a considerable proportion of a lake’s bottom invertebrate food resources that would otherwise be consumed by desirable fish species. Improved light conditions also allow sight-feeding fish to find their prey. As a result, the growth of desirable fish species is enhanced.

Of course, it is impossible to predict the exact impact that removing carp will have on Lake Kegonsa, but FOLKS and the other organizations we have worked with believe it to be worth the time and money to try to help our lake by moving forward with this endeavor.

## **Carp Removal Project**

For these reasons FOLKS has initiated a major carp removal project that will be conducted over the next two years. We are working closely with Dane County, the Wisconsin Department of Natural Resources (WDNR) and the UW Limnology Department on this challenging project.

Continued on Page 7.

## **FOLKS Carp Removal Project (Continued from Page 6)**

We will be receiving some financial help from Dane County and we will be applying for a Lake Planning Grant from the Wisconsin Department of Natural Resources to cover some of the costs, but even if we are awarded the Grant, FOLKS will have to pay up to \$12,000. If we are not awarded the grant the cost could be as much as \$21,000.

The following steps are required for the successful removal of the carp:

- Capture 15-20 carp from Lake Kegonsa, implant radio transmitters into them and re-release them back into the lake.
- Track their movement from the fall of 2015 through the summer of 2016 via airplane. This will be done 10-12 times to monitor their movement.
- Because carp prefer warm water the assumption is that as the water cools down the carp will migrate to the deepest, warmest part of the lake. During late spring as the water warms, carp may also have major spawning runs up the Yahara River to Lower Mud Lake, or into Door Creek.
- If we can detect where the majority of the carp go in the winter, we will contract with a commercial fishing company to remove the fish using a large seine net pulled under the ice. This will be done by placing a small radio-controlled submarine type device under the ice to spread the net to various drilled holes so that a small pulling engine can move the net through the area where the carp are located. The captured carp are then brought up in the net at the exit hole and removed from the lake. This is not very lucrative project for the commercial fishermen, so we expect that FOLKS will have to subsidize this work to achieve a more comprehensive removal of carp.
- Besides the potential removal of carp under the ice during the winter, the tracking study may also indicate carp may be vulnerable to being captured by fish weirs placed in the river or creek channels during the spring spawning season. Such a removal effort may be desirable as a longer-term solution to suppressing the carp population especially if the initial removal under the ice is successful.

This is the largest project FOLKS has been involved in during our 27 year history. Your membership will help us finance this major project. We thank you for your support.

If you have any questions about this project please send them to [peter.foy@charter.net](mailto:peter.foy@charter.net)

**FOLKS OFFICERS AND BOARD MEMBERS 2015**

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**Please Support Your Lake Association - Renew Your FOLKS Membership.**

This year's dues remain \$20.00 for households and \$30.00 for businesses.

If you have any questions regarding membership, please contact Gloria Kay at gloria@Kegonsa.org or Peter Foy at PeterF@kegonsa.org

**For More About FOLKS, Visit  
Our Website at  
WWW.Kegonsa.org**

FOLKS monthly board meetings are held on the second Wednesday of each month and the public are welcome to attend. Next Meeting is July 8, 2015, 5:30 - 7:00 PM.

Halverson's Supper Club, 1965 Barber Drive, Stoughton, WI 53589

**FOLKS Lost and Found**

Contact Cathie Taylor at CathieT@kegonsa.org to list lost and found items on the FOLKS website.



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P.O. Box 173  
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**Return Service Requested**

## FOLKS Business Members

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