

# Notes from the Chairman

## Paul Gettelman

I would first like to thank all district members for this opportunity to serve as Chairman of the Lake Puckaway Protection and Rehabilitation District in this our 40<sup>th</sup> anniversary. In the past 40 years there have only been 3 chairmen of the LPPRD, Phil Malsack, Don Cowan and Rudy Winther so it is quite an honor and pleasure to serve following these past chairmen.

Now a little history on myself, my family has had property on the south shore of Puckaway for over 100 years. I first came to the lake when I was 2 weeks old (would have been sooner if it was up to dad). When I was growing up here in the summers, there were only 10 houses on the south shore from Millers Resort to the West. The shore line was filled with bulrush and other aquatic vegetation. There weren't many carp. Fishing was great (in a little kid's eyes), perch, bluegills, crappies, rock bass, white bass, bullheads, catfish, northern and walleyes could be caught from our pier. I caught them all. The lake was shallow. We had Lake Blooms in August and the water was lower. The dam was an issue of some degree. Then the Carp came in abundance. The muck farms expanded in the west and more silt came into the lake. All these were issues that concerned many of the residents including my dad who was one of the founders of the Lake Puckaway Improvement Association. From the Association the Lake District was formed. The Dam became more of an issue for water level control and that topic was addressed by both the Association and Lake District.

Now where are we today? As Phil noted last year in his letter to all, 2016 was going to be a big year with the start of updating our Lake Management Plan. This was coordinated by Onterra, LLC throughout the summer with informational meetings open to the public for their input and comments. A committee consisting of some District Board members and District members was put together to listen and review the draft project that Onterra put together after all the meetings. Summary meetings are scheduled for Thursday May 4 and 6<sup>th</sup> (Should be done by the time this newsletter reaches everyone)

Other items that the District continues to be involved in is: Walleye Hatchery (Report in the Newsletter); Endangered and Threatened Species (Report in the Newsletter); Princeton Dam (Report in the Newsletter) and Habitat Restoration in cooperation with the CORPS of Engineers. Marker Buoys for the river and by the Dredge Bank. This project has become a major concern for district board members. It was mentioned last year that if the damage to the marker buoys continues they will be pulled. The buoys were damaged again, lights were knocked off and buoys broken and they were moved in the fall. In discussing this with the board, the buoys will be removed if damaged and not replaced. It will again cost the District over \$2,000 to repair the buoys that were damaged last year. Also please observe and follow the "Slow No Wake" signs and buoys in the river.

We are also looking for a Secretary for the Lake District. We have a Facebook page; you can check us out at Lake Puckaway. We try to have that kept current with what's happening with the Lake and District.

I look forward to serve as chairman for the Lake District and hope that we all have the same interest in the health and quality of Lake Puckaway for now and the future.

## **2016 Lake Puckaway Endangered and Threatened Species Monitoring Project Final Report to the Lake Puckaway Protection and Rehabilitation District**

For the 7th consecutive year, endangered and threatened water-bird species were monitored from spring arrival dates to fledging dates for those nesting in the Lake Puckaway proper. Endangered species monitored included Black, Caspian, Common and Forster's Terns. Threatened species included Great Egrets. Because of on-going management programs for Common and Forster's Terns, the emphasis was directed to these two endangered species. Black Terns were intensively monitored in 2014 and will be re-visited in 2017.

Nesting site protocols were changed for 2016 due to the increasing numbers of nesting pairs of Forster's and Common Terns, to minimize human disturbance at the two sites. 2016 proved to be another record-breaking year for both Common and Forster's Tern nesting success. The rafts fledged 77 Common Terns - the second largest colony in the state. Pancake Island fledged an estimated 500 Forster's Terns - the largest in the state by a large margin. Although Black Tern Fledglings were observed being fed by adults, no study was done since 2014. These sites will be re-visited for a follow-up survey in 2017. Great Egrets successfully fledged at both nesting sites with an estimated 120-140 fledged. Caspian Terns continue to use the lake for post-fledging dispersal from the Green Bay colony. Lake Puckaway remains one of the very few sites in Wisconsin where one can view all 4 endangered terns. As a side note, 2016 proved to be an incredible year for emergent vegetation growth with the north-south cane bed thickening and slightly expanding as well as the cattail and river bulrush beds expanding. For the first time in two decades, Yellow-headed Blackbirds nested in this area. This is a rapidly declining species across North America. The lotus beds were the largest and thickest I've seen in many years. These beds are crucial to the success of fledging Forster's and Black Terns providing both cover and food for the young terns as well as mallard, wood duck and blue-winged teal ducklings.

The Forster's Terns have adapted to Pancake Island quite well. It was far and away, the largest colony in the state in 2016. Presently, there does not appear to be any major threat to this colony, except during very high water years or habitat degradation due to erosion.

A follow-up survey of the 6 Black Tern colonies will take place in 2017 to determine if any changes have occurred since 2014.

As always, I would like to thank the LPPRD for their partnership in these programs over these many years and hope that it will continue into the future.

Respectfully submitted,

Daryl Christensen  
Water bird monitor, 2016



## COMPREHENSIVE MANAGEMENT PLAN CONDENSED OVERVIEW

In 1897 when the Princeton Lock and Dam was created, Lake Puckaway was changed. It was not only changed to have higher water for navigation, but also to have higher water levels more consistently. As the decades passed, these new conditions slowly, but steadily degraded the aquatic plant community. By the late 1940s, citizen efforts were being attempted to restore the emergent plant community by seeding for wild rice. In the early 1950s, an account of only 2,500 acres of emergent plants remained in the lake – less than half of what was historically present in Lake Puckaway. In 2015, studies completed as a part of Lake Puckaway Management Plan Update Project, mapped just over 200 acres of lake containing emergent plants. Studies that same summer documented that 80% of the lake contained no plant growth, emergent or submersed.

Carp, wind-driven waves, and higher and steady water levels have all worked to decrease the amount of plants in Lake Puckaway over the decades. While carp can definitely impact the plants within a lake, the district has worked for many years with the WDNR and commercial fisherman to minimize the carp population in Lake Puckaway. Lake Puckaway has always been an open system down to the Winnebago Pool Lakes and now with its new fish ladder at the Montello Dam, the system extends up through Buffalo Lake as well. Managing carp in such a large area is challenging, while temporary, the population has been reduced to the point that in 2016 commercial fishing was not completed because of lower carp abundance.

Wind-induced waves can also have a negative impact on aquatic plants, but many large, shallow lakes exist with healthy plant populations. Studies completed as a part of this project indicate that about a third of the lake's bottom is susceptible to wave erosion for about a third of the open water season. While those waves may be able to suspend sediments, they are seldom sufficient to pull plants from the bottom, especially if the plants are established. In fact, established plant beds reduce sediment resuspension by wind-induced waves significantly, even in large shallow lakes.

While these other factors impact Lake Puckaway's plant population, the largest impact comes from the maintenance of unnaturally high water levels. The Princeton Dam was created to keep Lake Puckaway's water levels higher than normal for navigation. While water levels still fluctuate, the dam has altered the levels of fluctuation, and in the long run have kept water levels higher than they would be naturally. This has changed the lake dramatically and is most apparent in the lake's minimal plant population. Yes, like all lakes, Lake Puckaway's plant population fluctuates, with some years having more plants than others, but even the highest levels of plants in the last few decades have not even approached the population that thrived in the lake prior to the 1950 and before the dam was constructed.

Decades of research has shown the same phenomenon on other lakes – altering natural water level fluctuations ultimately results in the decline of plant populations within shallow lakes. The decline in the plant populations is not simply because the water is deeper, it is because lake plants have evolved and adapted to those natural fluctuations. For example, some submergent plant forms rely on shallow lake levels later in the summer in order to have their reproductive structure stick out of the water. Some emergent species need to have the sediment exposed to germinate seeds and/or reduce other species so they can compete against them and lead to a more diverse population.

Shallow systems like Lake Puckaway also rely on healthy plant populations to maintain good water quality. They do this by utilizing light and nutrients that may otherwise be used by algae. They also help reduce algae by providing hiding places for the zooplankton (tiny animals) that graze upon the algae. Without the plants, the zooplankton are easily eaten by fish and algae blooms occur – like in Lake Puckaway. In fact, Lake Puckaway's blooms are so bad, the lake is on the Wisconsin impaired lake list. During some summers, blue-green algae dominate the algal population of the lake. Some blue-green algae produce toxins that can be dangerous to humans and other animals. Increasing plant populations within Lake Puckaway would reduce algae blooms of all kinds and lead to more consistently clear water in the lake.

The aquatic plants also perform other functions, like suppressing wave-induced resuspension of bottom sediments, as mentioned above. Emergent plants act as wave breaks and reduce shoreline erosion. The aquatic plants also provide important habitat for fish and other wildlife. WDNR fisheries biologists agree that increased plant populations in Lake Puckaway would lead to an even stronger fishery than the lake already supports. Further, increased plants would support a larger panfish population, which has been shown to reduce carp populations due to panfish feeding on carp fry.

There are 84 acres of land draining to each acre of Lake Puckaway, which means that the lake has a tremendously large watershed (442,000 acres). The watershed delivers high levels of phosphorus to the lake, which controls algae growth. While agricultural lands do deliver a large portion of the phosphorus that enters the lake, studies completed as a part of this project indicate that even converting half of the agricultural land to forested land would still result in high phosphorus levels in the lake. High enough that the lake would still be considered overly productive and support high levels of algae. While work in the watershed is important and will be called for as a part of the TMDL for the Fox River Basin, it is not the silver-bullet to solve Lake Puckaway's water quality problems. In fact, during many of the years, phosphorus being recycled in Lake Puckaway is substantial and adds to Puckaway's water quality problems and those of the waterbodies downstream. Increased plant abundances in Lake Puckaway would do much to reduce the internal cycling of phosphorus while competing with algae for the phosphorus that is entering the lake from the watershed.

The studies associated with this project and the studies associated with Lake Puckaway's earlier plans come to the same conclusion: while a significant increase in aquatic plants may not solve all of Lake Puckaway's issues, it would make the lake much better on many different levels. Increased populations of emergent, submergent, and floating-leaf plant species within Lake Puckaway would lead to better lake water quality and in-lake habitat. This would lead to an even better fishery and support waterfowl as well.

The district has attempted to increase plant populations in the past by planting emergent and submergent species, but they fell short of establishing. The district has also tried to extend lowered winter water levels into the spring by not placing the flashboards until later in June. However, in all those years, water levels were so high, it would have been dangerous to try to place them anyways.

As of this writing, the Princeton Dam Reconstruction Project is still within the Wisconsin biennial budget. In fact, there is no reason to believe it will not be funded. As a part of that project, state law will require an environmental document be created that will list possible impacts the new dam will have on the environment. The new dam's crest height is currently designed to be at the height of the current dam with the flash boards in place, so the new dam will impact the environment just like the current dam. To reduce those environmental impacts, the WDNR has urged the Lake Puckaway District to create a water level management plan as a part of this management planning project.

The Draft Lake Puckaway Updated Management Plan contains several goals along with specific actions to help the district meet those goals. Some of the actions will increase the district's abilities to manage the lake effectively and to communicate better with its members. Some of the actions are aimed at bettering the lake itself.

The draft plan calls for the creation of a Shallow Lake Workgroup comprised of district members, WDNR staff, and other agency representatives. This group has formed and is already working to complete several in-lake projects aimed at enhancing wildlife and fisheries habitat in Lake Puckaway. These projects will include the reconstruction of at least part of the east dredge bank as well as the reconstruction and stabilization of Pancake Island. Construction of new island habitat will also be considered. These projects will produce in-lake barriers that will reduce resuspension of bottom sediments while providing additional area for floating-leaf and emergent plant habitat. The actions carried out by the Shallow Lake Workgroup will increase available area within the lake for aquatic plant growth by providing more shallow and protected areas in the lake. However, those improvements alone will not provide for the establishment of additional plant community growth on their own .

To promote the enhancement of those aquatic plant communities, Lake Puckaway must be managed to include a real opportunity for those species to establish and thrive. In order for that to happen, Lake Puckaway's water level must be managed to more closely mimic those of a natural system, at least during some years. Lowering water levels during part of the growing season, as seen in natural systems, including the exposure of nearshore bottom sediments, would promote the establishment of emergent and floating-leaf species. Lowering water levels at that time would also increase light penetration in additional areas of the lake and aid in the establishment of submergent species. Utilizing lowered water levels during the latter part of the growing season has worked to increase plant abundances in Mississippi Pools and many other lake systems around the nation and world. Water level management alone, if conducted properly would increase emergent, floating-leaf, and submergent plants in Lake Puckaway. The in-lake restoration measures proposed as a part of the Shallow Lake Workgroup project list would enhance the increased habitat even further and in some areas, likely extend the longevity of the water level manipulation's affects.

The draft water level management plan calls for a 2.5-foot water level reduction from late June-September in two consecutive years. Considering water levels over the past couple of years, this would be about a 1.25-foot reduction compared to actual levels on July 4<sup>th</sup>. Lowering the water levels will bring about hardships for private and business riparian property owners on Lake Puckaway. That is without a doubt; however, to restore the lake for future generations, many that may inherit property from current property owners, this sacrifice is necessary. Still, it would be unfair to those property owners not to have a realistic method to plan when the reductions would occur. The water level management plan contained within the draft management plan accounts for the fact that Lake Puckaway flows are highly variable and as a result of high flows, a reduction may not be feasible during some years. Therefore, a discharge rate has been set in the plan that if not met on a certain date would trigger an abandonment of the attempt for that year. The water level management plan also limits the attempts at water level reductions so district members and other lake users know that year-after-year, reductions will not be attempted.

Finally, the plan contains a monitoring strategy to document changes in the lake's water quality and aquatic plant community so future management decisions, such as when another reduction sequence is needed to maintain the plant population enhancements brought on by previous sequences, are based upon real data. Or, to document that the plan is not causing the desired changes and should be rethought or possibly abandoned all together. These considerations for riparians may not be included in a water level management plan created by an outside agency if that agency is forced to create the plan. The water level management plan presented in the draft management plan does have some flexibility, but the overarching goal should be to enhance the health of Lake Puckaway and make future management decisions based upon real data.

## **LPPRD WALLEYE HATCHERY 2017**

PAUL GETTELMAN

After last year's rather dismal fry release we were hoping for a much better year. Last year was our 3<sup>rd</sup> "worst" year we had since we started in 2010. (Even a bad year is still a good year if we can release fry in the lake). We started collecting the fish on April 3 and stopped on April 4. We collected a total of 2,682,909 eggs (largest number of eggs we have ever collected) and released 2,050,000 fry (the 3<sup>rd</sup> largest fry released) for a hatch rate of 76%. A fantastic year considering we did this all in 17 days.

This year the DNR worked the nets for our walleye as they were doing a fish survey of the lake and had 6 nets for us to get the walleyes from. It worked out pretty good as we were able to get our walleyes in 2 days rather than the almost 2 weeks it took us last year (weather and high water caused the problem last year). We ended up with a total of 32 females that we used and 94 males. We had 53 males left over that we didn't use. We brought in a total of 179 walleyes.

The average length of the females we used was 19.8". The average length of the males we used was 16.8". The largest male we had was 19.2" The largest female we milked was 28" which gave us 2.75 quarts of eggs or 325,451 eggs. Or figures indicate that over 60% of her eggs were not fertile.

The Hatchery would like to thank all the volunteers that helped out again this year, Rick Klawieter, Gary Walker, Randy Schultz, Gene Weber, Randy Schmidt, Rich Pergande and Roger Swanke. Sorry if I missed anyone.

There are plenty of pictures and some videos on our facebook page; Lake Puckaway. You can even see what it is like for a fry to leave the jar and take the water park ride to the fry tank. Fun stuff. Our Face book page is going all year and will keep you up to date with anything that we are doing.

# PRINCETON DAM PROJECT

## PAUL GETTELMAN

Last year I was notified that the DNR had put the Princeton Dam in their budget for the fiscal year 2017—2019. This was great news as in order for the project to go forward it needed to be in the DNR budget first. In January of this year I talked with Missy Vanlanduyt of the DNR Recreation, Planning and Development Section who is the current contact person for the Princeton Dam Project. She told me that they were updating the 35% design Report to get the Dam Cost figures in line with current costs.

In the end of January some members of the District and board members along with myself met with Senator Olsen to inform him of the Princeton Dam project and solicited his support for it. At that time he indicated that if it was in the DNR budget it had a good chance of it going through.

On April 7<sup>th</sup> I went to the Joint Finance hearing that was held in Berlin and testified on behalf of the Lake District in Support of the Princeton Dam Project. On the Following Monday, April 10<sup>th</sup> I went to Rep. Joan Ballweg's listening session in Montello and again solicited her support for the Dam Project. She too will support it to whatever degree that she can. The Dam Project is currently in the State Budget in the all Agency Portion of the budget. The Governor has indicated to fund this portion in total in the budget. This of course is subject to other agencies cutting in on some of this funding. We will have to wait and see. (We should know more by the time of the annual meeting.) If this is funded, it goes to the Building Commission. The DNR plans on submitting it in June to them so it makes their scheduled August meeting.

### Lake Puckaway Protection & Rehabilitation District Commissioners

Paul Gettelman Chairman Term 2015-2018  
W6202 Lakeview Dr  
Markesan, WI. 53946  
920 291 5214

Roger Swanke Term 2014-2017  
N2875 Nicolet Rd  
Markesan, WI. 53946  
920 394 3098

Gene Weber Treasurer Term 2015-2018  
208 E Front St  
Marquette, WI. 53947  
920 723 8487

Kurt McCulloch Term 2016-2019  
6954 Forseth Ct  
West Bend, WI. M53090  
262 305 8952

Gary Wilson Standing Member Town of Mecan  
W441 Huron Bay Dr  
Montello, WI. 53949  
815 520 0209

Jeff Kimber Term 2016-2019  
W6896 Jolin Rd  
Markesan, WI. 53946  
920 210 2471

Dave Richter Green Lake County Appointee  
W3293 Orchard Ave  
Green Lake, WI.54941  
920 295 0277

ANNUAL MEETING AND BUDGET HEARING  
LAKE PUCKAWAY PROTECTION AND REHABILITATION DISTRICT

Pursuant to Sec.33.30 (2) of Sec.65.90 (3) Wisconsin Statutes, the Lake Puckaway Protection and Rehabilitation District Annual Meeting and Budget Meeting will be held;

Date: Saturday June 3, 2017  
Place: Marquette Village Hall  
Marquette WI.  
Time: 10:00 AM

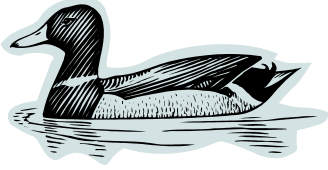
SUMMARY OF THE PROPOSED BUDGET FOR 2018

| ANTICIPATED REVENUES            | ANTICIPATED EXPENSES         |
|---------------------------------|------------------------------|
| Projected Unexpended Revenues   | Administration.....6,000     |
| From FY 2017.....15,000         |                              |
| Anticipated Donations.....500   | Hatchery 2,000               |
|                                 | Rough Fish 10,000            |
|                                 | Lake Projects 25,000         |
| Anticipated Interest.....500    | Dam Donation <u>5,000</u>    |
|                                 | Lake Management 42,000       |
| Tax Levy Recommended.....35,000 | Dam Operations 3,000         |
|                                 | Operation <u>45,000</u>      |
| <b>TOTAL REVENUE 51,000</b>     | <b>TOTAL EXPENSES 51,000</b> |

2017 ANNUAL MEETING AGENDA

1. Call to Order Chairman Paul Gettelman
2. Certification of Open Meeting Notice
3. Adoption of Agenda
4. Secretary's Report; Paul Gettelman ( June 4, 2016 )
5. Treasurer's Report: 2016
6. Election of one commissioners term  
2017-2020 Roger Swanke
7. Fish Hatchery Report; Paul Gettelman
8. Commissioners Report; Paul Gettelman
9. Open Public Comment; (30 Minutes)
10. Proposed 2018 Budget and Tax levy
11. Budget Hearing and Adoption of the 2018 Budget
12. Adjournment

LAKE PUCKAWAY PROTECTION  
& REHABILITATION DISTRICT  
Paul Gettelman  
W6202 Lakeview Dr  
Markesan, WI. 53946



**LAKE PUCKAWAY 2017  
ANNUAL NEWSLETTER**