



## 2020-2021 LAKE PROTECTION DISTRICT REPORT

### INTRODUCTION

This annual Lake Protection District report chronicles a year of hard work and success for a District with a volunteer commission and three part-time employees who continue to provide the highest quality of service to the community and its residents. In 2020-2021, the Protection District Board of Commissioners and its dedicated staff provided these quality services while operating within the limits of the approved balanced operation budget. The following report provides a summary of the district's programs, activities, projects, proposed goals, and projects for the 2021-2022 season.

### DISTRICT HISTORY

The Paddock Lake Protection and Rehabilitation District was established in 1975 under the authority of Wisconsin Statute, Chapter 33. The district was created in response to a petition filed by resident landowners within the watershed. The citizen petition sought establishment of the district for the purposes of managing and controlling the ever-increasing growth of aquatic weeds.

The Protection District consists of approximately 2.2 square miles of privately and publicly owned properties in central Kenosha County

### BOARD OF COMMISSIONERS

The Village of Paddock Lake Board of Trustees serves as the Lake Protection District Commissioners, the board of commissioners consist of seven (7) members serving two (2) year terms consistent with Trustees elected term. The Board of Commissioners has the authority to administer adopted budgets, policies and oversee and direct District staff.

Terry Burns

Barbara Brenner

Renee Brickner

Chairperson

Scott Garland

John Poole

Robert Spencer

Gloria Walter

## DISTRICT STAFF

Day to day operations of the district is managed by the District Administrator and seasonal harvesting staff. All District staff can be contacted through the Village Hall's main phone number 262-843-2713 or by email at [tpopanda@paddocklake.net](mailto:tpopanda@paddocklake.net)

Tim Popanda  
District Administrator

Michelle Shramek  
District Clerk/Treasurer

Larry Hogan  
Harvester Operator

## LAKE MONITORING DATA

Lake monitoring and testing is conducted weekly, sampling occurs throughout the open water season by citizen volunteers. Testing results for the 2021 season revealed that our lake has shifted from Oligotrophic (2020) back to Mesotrophic. Wisconsin Trophic State Index (TSI) score places lakes into category of oligotrophic, mesotrophic, eutrophic, or hypereutrophic. Inland Lakes naturally fit into one of the first three categories, but hypereutrophic lakes are within that category because of human-caused nutrient enrichment. Below is brief description of the categories.

**Oligotrophic-** lakes are generally very clear, deep, and cold. Nutrient levels are low, the fish that occur in oligotrophic lakes are often low in abundance, but larger in size. Many oligotrophic lakes divide into two layers in the summer, a condition known as stratification.

**Mesotrophic-** lakes contain moderate amounts of nutrients, and contain healthy diverse populations of aquatic plants, algae, and fish. Occasional algae blooms may occur. If the lake is deep enough to stratify, hypolimnion often becomes low in oxygen by the end of the summer and may result in some phosphorus release from sediments.

**Eutrophic-** lakes are high in nutrients and contain large populations of aquatic plants, algae, and fish. The lake substrate is typically soft and mucky. The aquatic plants and algae often grow to nuisance levels, and the fish species are generally tolerant of warm temperatures and low oxygen conditions.

**Hyper-eutrophic-** lakes are very high in nutrients, and often exhibit large algae blooms, which may include dangerous levels of blue-green algae. Fish communities in hyper-eutrophic lakes are dominated by carp and other species that can tolerate warm temperatures and low oxygen conditions.

## NUISANCE MIGRATORY BIRDS

The Village and the Lake Protection District maintains an annual migratory bird harvesting permit, issued by the U.S. Fish and Wildlife Services. In the past the Village conducted migratory bird roundups when the goose population exceeded 65 geese or one goose per two (2) acres of lake surface. In recent years, the Village and Lake District has implemented a goose addling program. The addling consists of locating nests and spraying the eggs with vegetable oils to prevent hatching. The following table accounts for the success of the program.

## NEST ADDLING SUMMARY

YEAR	OFFICAL COUNT IN MAY	# OF NESTS AND # OF EGGS
2018	19	7 NESTS/27 EGGS
2019	17	7 NESTS/31 EGGS
2020	23	8 nests/39 EGGS
2021	18	9 NESTS/ 38 EGGS

### AQUATIC MANAGEMENT PLAN

The Lake District last commissioned a Point Intercept Plant Survey in 2005 by Aaron and Associates, the Intercept Plant Survey is used by Lake Biologists to create a Mechanical Weed Harvesting Plan, both survey and harvesting plan is a prerequisite for obtaining the WDNR harvesting permit. The WDNR requires a new plant survey and harvesting plan be performed and submitted every five (5) years.

The Lake District currently operates under a WDNR extension of the districts expired 2015-2019 (with extensions) mechanical harvesting permit. The extension of the 2015-2019 permit was requested to allow the district to apply for and receive a WDNR surface water grant, solicit lake biologists, and enter a contract with a lake biologist to perform the survey. In early 2021, the Lake District solicited proposals from qualified lake biologists to perform the required Point Intercept Plant Survey. The lowest qualified proposal was received by Cason and Associates and awarded to Cason and Associates in the amount of \$10,300.

### HARVESTING EQUIPMENT

The districts five (5) year old harvesting equipment now with 3,200 operating hours is being well maintained by District staff. To prolong the life of the equipment and to prevent service interruptions, District staff has initiated a preventative maintenance plan. **Phase I** of this maintenance plan saw several off-season repairs which included the replacement of conveyor bearings, wear plates, conveyor rollers and adjustment of the conveyor belts. **Phase II** of the preventative maintenance plan was scheduled and performed in early 2021, the 2021 off - season repairs included service to shore conveyor bearings, drive belts and adjusters.

### WATER QUALITY AND STORM WATER

The Village Board and Village staff have undertaken several ambitious projects to reduce sediments and other pollutants from entering the lake. Agricultural lands surrounding the Village and draining sediments to the lake have been acquired and placed under village management, road ditch lines have been improved to separate sediment and nutrients from rainwater; storm water collection systems have been cleaned, streets are swept on a regular basis to comply with the WDNR issued Wisconsin Pollutant Discharge Elimination System (WPDES) Municipal Separate Storm System (MS4) General permit No. WI-SO50075-3

## Water Quality at Swimming Beaches

The five swimming beaches are tested weekly by the Kenosha County Health Department to determine and ensure safe levels of E. coli (Escherichia Coli), E. coli is a bacteria found in the digestive systems of mammals, birds, and humans. Wisconsin Dept. of Health uses the presence of E. coli in surface water as an indicator of water pollution due to feces.

The detection of E. coli is important for the safety of residents and visitors using the lake and the beaches, E. coli and associated pathogens in high concentrations have the potential to make people and pets sick if ingested. Wisconsin Dept. of Health has established minimum standards for closing swimming beaches due to elevated E. coli levels, those established levels are shown in the below chart:

E. coli sample results	Action and notice to public
E. coli 0 to 299m/L	No action or notice
E. coli 300 TO 999m/L	Post signs to caution beach users
E. coli 1000m/L and above	Close beach

Beginning in 2018, three of the swimming beaches on Paddock Lake began experiencing an increase in elevated E. coli bacteria levels that exceed Wisconsin Department of Health guidelines for swimming beaches. After further increases of positive E. Coli beach samples in 2019, the Village undertook an aggressive investigation of stormwater draining to the lake. The detailed investigation discovered that a private sanitary sewer lateral had separated and was leaking household waste into the ground and through infiltration was contaminating ground water that drained to the lake. This privately owned lateral has been repaired resulting in a significant reduction of positive E. Coli beach and lake samples.

### HARVESTING OPERATIONS

Invasive lake weeds are harvested from the lake beginning the third week in May through the third Friday in September. The 2020 mechanical harvesting season saw the removal 2,187 cubic yards of Eurasian Milfoil and Curly Leaf Pond Weed. Included in the harvesting operations is a Lake District operated seaweed shore pile collection and disposal program, this program has District staff collecting seaweed piles from residents' shorelines. District staff requests that shore piles be placed as close to the water's edge as possible and keep piles free of sand, rocks, debris, and brush.

### Lake weed Harvesting totals

Year	2017	2018	2019	2020
Total Cubic Yrds	1,794	1,930	1,990	2,187

## FISH STOCKING

While the majority of Wisconsin inland lakes have self-sustaining fish populations, stocking remains an important management tool for fish populations. In 2018 several area groups and friends of Paddock Lake joined forces to establish the Paddock Lake Fish Stocking Association, this non-profit organization raised private funds to purchase several hundred game fish that appear to be thriving in our lake, the below photos depict the success of the stocking program.



The walleye shown in the top left was caught and released summer of 2020, the photo above depicts the walleye fingerlings in 2018, the photo to right depicts a walleye caught and released July of 2021.

## LAKE ELEVATION MANAGEMENT

The lake elevation is controlled at a privately owned and operated spillway, located in the southwest corner of the lake. This spillway was once part of the dam to control water levels for ice harvesting. Because the village has no control of the spillway or access across privately owned land the authority having jurisdiction over the spillway and or lake level is the Wisconsin DNR. THE Village has installed a lake elevation gauge on the PHLA sea wall next to the channel. This elevation gauge is used by Village staff to monitor the lake water elevations for declaring no-wake conditions on the lake. Attached as exhibit is an accounting of the 2021 lake water elevations.



## GOALS AND OBJECTIVES FOR 2020-2021

- Implement phase II of harvesting equipment preventative maintenance program. **Complete**
- Seek and obtain qualified bids for aquatic weed survey and harvesting plan. **Complete**
- Obtain new five-year harvesting permit from WDNR. **On-going**
- Continue to study and investigate source of E. coli and illicit discharge. **On-going**
- Continue nuisance bird addling program. **Complete 2021**
- Emergency repairs to 238<sup>th</sup> Ave. Public boat launch. **Complete 2021**

## GOALS AND OBJECTIVES FOR 2021-2022

- Explore and seek approvals from U.S. Fish and Wildlife Bureau to harvest migratory geese after July 1.
- Continue to perform preventative maintenance on the harvester.

Respectfully submitted by:

Timothy Popanda  
Village Administrator  
Lake Protection District Administrator

August 17, 2021