

# **AQUATIC PLANT HARVESTING REPORT**

**- 2020 -**

**DELAVAN LAKE, WISCONSIN**

**DELAVAN LAKE SANITARY DISTRICT**  
of the Towns of Delavan and Walworth

2990 County Road F South  
Delavan, Wisconsin 53115

October, 2020

# **AQUATIC PLANT HARVESTING REPORT**

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# AQUATIC PLANT HARVESTING REPORT

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## DELAVAN LAKE, WISCONSIN

### Aquatic Plant Harvesting - 2020

The adopted APM plan in May, 2011 (revised in 2017) for Delavan Lake recommended that mechanical harvesting be implemented as the primary method of controlling nuisance aquatic plants. The plan emphasized that harvesting be used to remove only those nuisance plants necessary to facilitate recreational use, rather than simply 100% plant removal. Prior to June 15, the plan limits aquatic plant harvesting to cutting only access channels in those areas necessary to facilitate boating to piers and channels. This practice was recommended to minimize loss of newly spawned fish by the harvesting equipment. After mid-June, harvesting operations could be expanded to include all areas of the lake where nuisance plant conditions prevailed.

DLSD utilized several pieces of mechanical equipment to harvest aquatic plants. This equipment included four harvesters, one high-speed transport barge, four off-loading shore conveyors, two dump trucks and three other support vehicles. The maximum cutting width ranged from 7 feet for the three larger harvesters to five feet for the smallest harvester. Each of the four harvesters was capable of harvesting plants up to a maximum depth of five feet.

During 2020, mechanical harvesting ran from May 21st thru October 14th. Harvesting work was done on weekdays as weather permitted. The harvesters were operated a total of 57 calendar days during that period.

DLSD had one full time employee assigned to manage portions of the aquatic plant harvesting operations. Six part time persons were hired for the harvesting program this past summer which is less than in past years due to COVID-19. These seasonal persons were available from the middle of May through the middle of October. The estimated costs for the DLSD harvesting program for the year 2020 was approximately \$123,400. These costs included labor costs (\$98,000), supplies (\$10,600) and equipment expenses (\$14,800). Off-season equipment maintenance and repair work were included in these costs.

For purposes of the APM program, the lake was divided into 12 harvesting areas as shown on Figure - 1. A description of the location along the shoreline for each management area was shown in Table - 1. During 2020, aquatic plants were harvested in all 12 harvesting areas. The approximate location of the harvesting activities is shown as the shaded areas on Figure - 1. Nuisance aquatic plants were harvested in approximately 302 acres as noted in Table - 1. The harvesters passed through each area of the lake an average of 12 times, during the harvesting season depending upon nuisance plant conditions in any given area. With reduced staff due to COVID-19, DLSD focused on areas of the lake with the most concentration of weeds.

An estimate of the volume and species of aquatic plants harvested in each area of the lake has been shown in Table - 2. Wild Celery, Algae and Milfoil accounted for approximately 32%, 23% and 23% respectively of the total volume harvested. Coontail accounted for another 12% of

the total plant volume removed from the lake. The four areas of the lake where the largest volume of aquatic plants were harvested from were in Area 9, Area 12, Area 10, and Area 5 respectively. Area 9 is Silver Sands Point to the Town Park, Area 12 is the Outlet - North Shore Drive bridge west to the dam, Area 10 is the Inlet upstream from State Road 50 Bridge - developed shoreline area and Area 5 is the southwesterly bay located at the west end of the lake. The total estimated volume of plants harvested during the summer of 2020 was 3,903 cubic yards as shown in Table - 2.

Harvested plants were transported to one of four off-loading sites located at various points on the lakeshore. DLSD utilized four shore conveyors that allowed harvesting operations to occur at four separate portions of the lake simultaneously. The shore conveyors were used to lift the harvested plants from the harvesters into a dump truck. 100% of harvested plants were taken to an agricultural site for composting and use as a soil-conditioning agent in their farm operations. DLSD was not aware of any permit violations occurring during the harvesting season.

### **Pier Pick Up Service**

In response to requests from lake front property owners, DLSD, for the 20th year in a row, provided pier pick up service. The pier pick up service was offered for those lake front owners who wanted to clean aquatic plants from their respective shore areas. Property owners were required to place their plant material on the end of their pier and call the DLSD office in advance for pier pick up. Where the work crew found trash, garbage or other debris mixed in with the aquatic plants, the crew did not pick up the non-aquatic plant materials on that pier. Pier pick up was conducted on Monday of every other week, or as soon thereafter as the weather permitted. Pier pick up began the week of June 1st and continued every other week through the week of August 4th. An estimated 3 cubic yards of plants were picked up during 2 pier stops during the 2020 season.

### **Harvesting Summary**

The volume of aquatic plants harvested in the lake has varied from year to year as shown on Figure - 2. The smallest volume of plants was harvested during 2007 when only 1,332 cubic yards were removed from the lake. The 2003 season saw the largest volume of plants harvested at nearly 6,000 cubic yards. Data showing the number of days of harvesting, harvester loads and cubic yards of plants harvested for the period of 1997 through 2020 are shown in Table - 3. For the period of 1997 through 2020, the average volume of plants harvested was 3,186 cubic yards per year.

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**TABLE - 1**  
**ESTIMATED AQUATIC PLANT HARVESTING BY AREA FOR 2020**  
**DELAVAN LAKE, WISCONSIN**

AQUATIC PLANT MANAGEMENT AREA	LAKE SHORE LOCATION DESCRIPTION	ESTIMATED LENGTH OF SHORE LINE	ESTIMATED DISTANCE OUT FROM SHORE	ESTIMATED POTENTIAL MANAGEMENT ACRES	ESTIMATED TOTAL ACRES HARVESTED	VOLUME OF AQUATIC PLANTS HARVESTED
1	North Shore Dr to Windtree Condos	3925	650	59	59	350
2	Windtree Condos to Delavan Boat Co	2900	300	20	20	41
3	Delavan Boat Co to Chicago Club	3250	400	30	15	9
4	Chicago Club to Point on Island	5550	700	89	89	307
5	Point on Island to S Shore Manor Point	4400	400	40	40	628
6	S Shore Manor Point to Del Oaks	1800	250	10	10	30
7	Del Oaks to Belvidere Park	2250	200	10	5	14
8	Belvidere Park to Silver Sands Point	2250	200	10	5	29
9	Silver Sands Point to Town Park	2250	200	10	10	1004
10	Inlet Upstream of S R 50	3200	200	15	15	678
11 *	Lake Lawn Resort	4400	500	51	4	26
12	Outlet- North Shore Dr to Dam	6500	200	30	30	787
<b>ESTIMATED TOTAL AQUATIC PLANT MANAGEMENT AREA :</b>				<b>374</b>	<b>302</b>	<b>3903</b>

\* Lake Lawn operates its own harvesting operations.

**TABLE - 2**  
**AQUATIC PLANT HARVESTING - 2020**  
**DELAVAN LAKE, WISCONSIN**

LAKE MANAGEMENT AREA	ESTIMATED VOLUME OF PLANTS HARVESTED BY SPECIES										TOTAL CUBIC YARDS HARVESTED
	MILFOIL	CURLY LEAF	ALGAE	WILD CELERY	COONTAIL	Star Grass	Water	OTHERS			
1	67.6	9.1	131.9	105.1	36.4	0.0	0.0	0.0	0.0	0.0	350.0
2	11.5	2.5	7.9	7.2	10.5	0.0	0.0	1.4			41.0
3	0.0	1.8	2.7	1.8	2.7	0.0	0.0	0.0			9.0
4	30.0	7.8	48.8	184.9	22.5	0.0	0.0	13.0			307.0
5	109.2	41.6	143.7	241.0	92.6	0.0	0.0	0.0			628.0
6	4.5	1.8	4.3	14.0	5.4	0.0	0.0	0.0			30.0
7	0.0	1.8	2.0	6.6	3.6	0.0	0.0	0.0			14.0
8	4.4	1.8	5.1	9.0	8.7	0.0	0.0	0.0			29.0
9	170.9	38.2	422.8	207.9	142.4	0.0	0.0	21.8			1,004.0
10	318.6	58.9	54.2	102.2	70.5	0.0	0.0	73.6			678.0
11 **	9.8	2.3	5.2	0.4	8.3	0.0	0.0	0.0			26.0
12	172.4	40.0	67.1	368.9	61.2	0.0	0.0	77.4			787.0
<b>TOTALS</b>	<b>898</b>	<b>208</b>	<b>896</b>	<b>1249</b>	<b>465</b>	<b>0</b>	<b>0</b>	<b>187</b>			<b>3903</b>
<b>PERCENT</b>	<b>23%</b>	<b>5%</b>	<b>23%</b>	<b>32%</b>	<b>12%</b>	<b>0%</b>	<b>0%</b>	<b>5%</b>			<b>100%</b>

\*\* Lake Lawn operates its own harvesting operations.

**TABLE - 3**  
**AQUATIC PLANT HARVESTING SUMMARY**  
**FOR YEARS 1997 THROUGH 2020**  
**DELANVAN LAKE, WISCONSIN**

<b>YEAR</b>	<b>DAYS WORKED</b>	<b>TOTAL HARVESTER LOADS</b>	<b>ESTIMATED CUBIC YARDS REMOVED</b>
1997	71	556	3,835
1998	58	168	1,430
1999	71	262	1,765
2000	77	439	4,155
2001	74	373	2,869
2002	73	379	5,026
2003	78	635	5,949
2004	75	329	2,288
2005	78	487	4,177
2006	73	325	2,749
2007	47	169	1,332
2008	40	146	1,385
2009	49	174	1,746
2010	54	236	2,392
2011	55	188	1,864
2012	72	306	4,230
2013	71	218	2,717
2014	82	185	2,875
2015	85	372	4,891
2016	86	233	3,278
2017	62	213	3,453
2018	62	260	4,319
2019	67	340	3,845
2020	57	386	3,903
<b>AVERAGE</b>	<b>67</b>	<b>307</b>	<b>3,186</b>



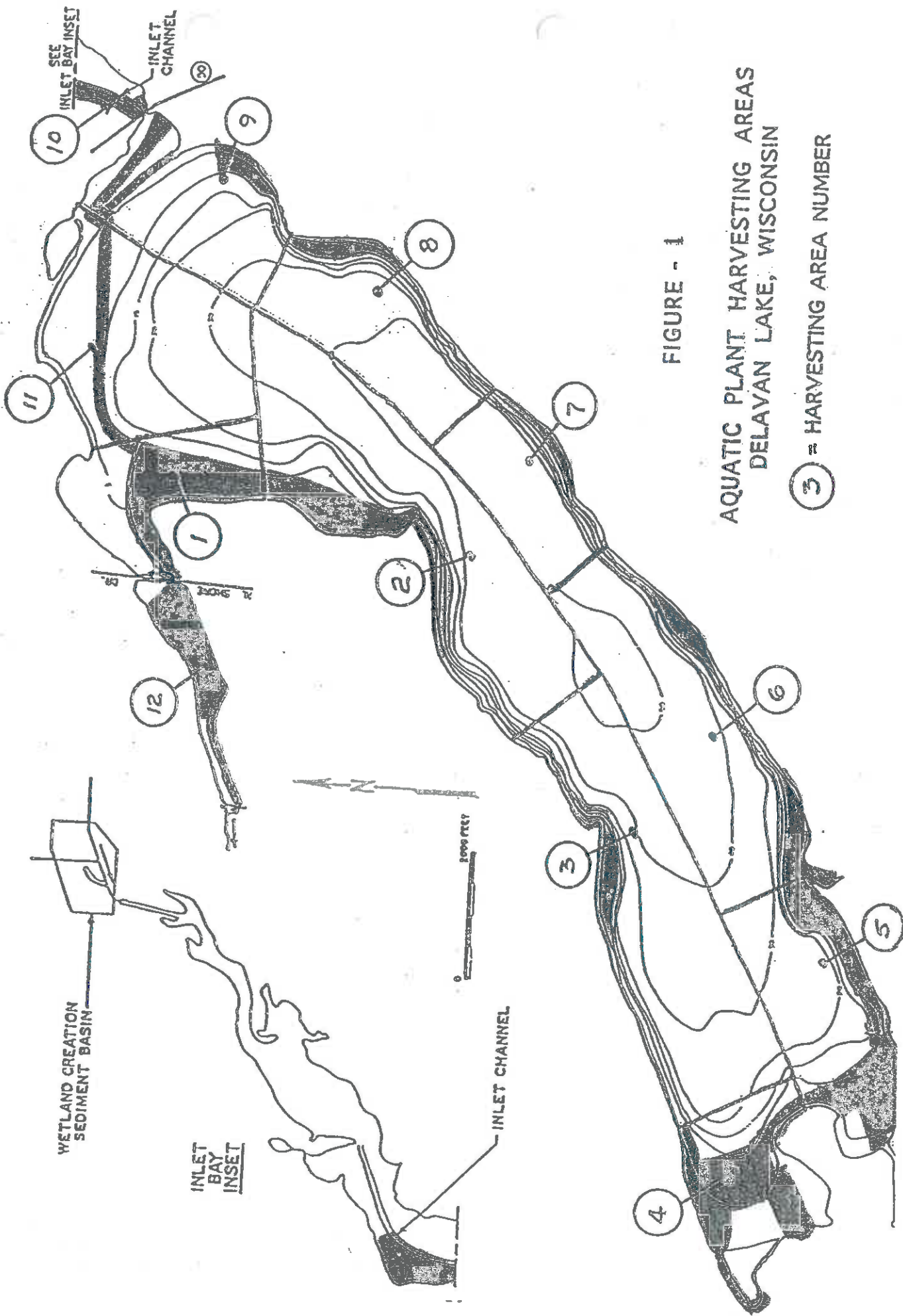


FIGURE - 1

AQUATIC PLANT HARVESTING AREAS  
 DELAVAN LAKE, WISCONSIN

③ = HARVESTING AREA NUMBER

**FIGURE - 2**  
**VOLUME OF AQUATIC PLANTS HARVESTED**  
**DELAVAN LAKE, WISCONSIN**

