

**Minutes of the Lake Oakland
Lake Improvement Board Meeting
October 20, 2020**

Mr. Sabina called the Teleconference meeting to order at 3:05 p.m.

PRESENT: Rick Sabina, Citizen Member/Chairperson
George Nichols, Oakland County WRC, Member/Secretary
Margaret Birch, Waterford Township Treasurer, Member/Treasurer
Terri Nallamotheu, Independence Township Member
Paul Hausler, Progressive AE
Jim Williams, Resident

ABSENT: Tom Middleton, Oakland County Board of Commissioners, Member

Mr. Nichols started the meeting by reading a statement that the meeting will continue to follow Michigan's Open Meetings Act as well as the Governor's Executive Order 2020-15 temporarily suspending the rules regarding physical presence at public meetings.

All participants stated their name and affiliation for the record.

Approval of the Meeting Agenda:

Ms. Birch, supported by Mr. Nichols, moved to accept the meeting agenda as presented (see Attachment 'A').

Roll Call Motion Carried Unanimously

Approval of Meeting Minutes:

Ms. Birch, supported by Mr. Nichols, moved to accept the minutes as submitted for the meeting of August 18, 2020.

Roll Call Motion Carried Unanimously

Old Business:

A. Project Work Journal Treatment Update

Mr. Hausler provided a Project Work Journal (see Attachment 'B') dated October 20, 2020 that outlines all the services regarding plant control and associated costs to date for the 2020 calendar year. According to the Work Journal there is \$1,553.03 remaining in the 2020 budget, but it was noted that there is a line item missing acknowledgment of the \$1,500 EGLE permit fee. Therefore, the balance of \$53.03 is remaining. There was a lake survey on September 9, 2020 that noted 50% of the harvest has been completed. Another lake survey on September 15, 2020 notes that the lake is in good condition.

B. Herbicide Treatment Update

Mr. Hausler stated that there was a lake survey on August 19, 2020 (see Attachment 'C') and a herbicide treatment administered on August 26, 2020 focusing primarily on milfoil, starry stonewort, and nuisance native plants.

C. Harvesting Treatment Update

Mr. Hausler discussed the September 9, 2020 Harvest Treatment Map (see Attachment 'D'). There were some additional harvesting acres that were added, which were provide to Mike's Clearwater Harvesting. The harvesting took place between September 6 – 14 and was comprised of about 18 acres. As of September 9th, the harvesting was about 50% complete.

New Business:

A. Aquatic Plant Control Program 2020 Activity Summary

Mr. Hausler stated that the aquatic plants are an important component of lakes. They produce oxygen during photosynthesis, provide food, habitat and cover for fish, and help stabilize shoreline and bottom sediments. The summary provides an explanation of the plant surveys and plant controls within Lake Oakland. There were seven (7) surveys performed, five (5) herbicide treatments performed, and two (2) harvesting that occurred. A vegetation survey of Lake Oakland was conducted on September 9th to evaluate the type and abundance of all plants in the lake. At the time of the survey, eighteen (18) submersed species, one (1) free-floating, two (2) floating-leaved species, and eight (8) emergent species were found in the lake. (see Attachment 'E')

Mr. Nichols, supported by Ms. Birch moved to Receive, Note and File the Aquatic Plant Control Program 2020 Activity Summary.

Motion Carried Unanimously

B. 2020 Lake Oakland Chairman Report

Mr. Sabina mentioned a few particular items within his report (See Attachment 'F'). First, the DNR fish survey is delayed due to the pandemic with the intension of conducting a fish survey in 2021. Second, the Kalamazoo Nature Center suspended their purple loosestrife beetles due to lack of personal. Mr. Sabina will contact them again in the spring. Third, Mr. Sabina showed a comparison of the harvest acreage, truckloads and man hours over the past three years. This report will also be posted on the Lake Oakland website.

Mr. Nichols, supported by Ms. Birch moved to Receive, Note and File the 2020 Lake Oakland Chairman Report.

Motion Carried Unanimously

Public Comments:

Mr. Jim Williams (representing the Lake Oakland Heights Beach Association) asked the question why the harvest was so late in the season. Mr. Sabina stated that some residents who have used the lake beyond their typical boating season noted emerging weeds that were impeding the use of the lake. Since there was remaining funds available, the Board decided to use some of the funds for a limited harvesting project.

Mr. Williams also asked why the treatment signs are being posted all around the lake even though they are only treating certain areas of the lake. Mr. Hausler stated that by law, postings are to be placed 100 feet on either side of the treatment and at all public access points to the lake. Mr. Williams requested that near the beach the posting only be placed if treatment is occurring in that area. Mr. Hausler stated that the beach can still be used the day the notice gets posted, just not the next day when the treatment occurs. He will contact Aqua-Weed Control Services and bring this to their attention.

Lake Oakland Invoice Ratification:

Mr. Sabina outlined invoice #15072 from Aqua-Weed Control Services (dated August 28, 2020) in the amount of \$7,743.19 that was approved by email acknowledgement since the last Board meeting, as noted in Item '8a'.

Ms. Birch, supported by Ms. Nallamotheu, acknowledging the correspondence and to ratify the approval and payment of the invoice.

Motion Carried Unanimously

Mr. Sabina outlined invoice #127 from Mike's Clearwater Harvesting (dated September 13, 2020) in the amount of \$8,137.00 that was approved by email acknowledgement since the last Board meeting, as noted in Item '8b'.

Ms. Birch, supported by Ms. Nallamotheu, acknowledging the correspondence and to ratify the approval and payment of the invoice.

Motion Carried Unanimously

Mr. Sabina outlined invoice #179549 from Progressive AE (dated September 28, 2020) in the amount of \$5,000.00 for Lake Management Administration and Oversight that was approved by email acknowledgement since the last Board meeting, as noted in Item '8c'.

Ms. Birch, supported by Ms. Nallamotheu, acknowledging the correspondence and to ratify the approval and payment of the invoice.

Motion Carried Unanimously

All Else:

- A. Current assessment is valid until 2023. Would need to coordinate new assessment and notifications at the end of 2022.
- B. Water sampling is scheduled for October 26, 2020.
- C. Ms. Birch announced that she will be retiring on November 20, 2020. Therefore, a new Waterford Township representative will need to be appointed.
- D. Mr. Middleton is not seeking re-election and therefore a new Oakland County Board of Commissioner Trustee will need to be appointed. Will not know who this will be until after the general election on November 3, 2020.

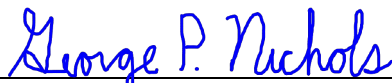
Meeting Schedule:

The next Lake Board meeting will be on determined once the new Waterford Township representative and new Oakland County Board of Commissioner Trustee have been selected. Typically, our next meeting takes place in April. Mr. Nichols will coordinate a meeting date and time based on the new board members schedules and COVID-19 restrictions. Once the meeting has been set, it will be listed on the website.

Adjournment:

Ms. Birch, supported by Mr. Nichols, moved to adjourn the meeting at 4:00 p.m.

Motion Carried Unanimously

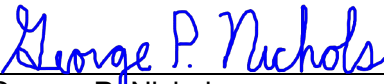


George P. Nichols
Lake Improvement Board Secretary
For Lake Oakland

STATE OF MICHIGAN)
) ss:
COUNTY OF OAKLAND)

I hereby certify that the foregoing is a true and complete copy of the minutes of the Lake Improvement Board for Lake Oakland, Oakland County, Michigan held on the 20th day of October 2020, and that the said minutes are on file in the Office of the Oakland County Water Resources Commissioner and are available to the public.

I further certify that notice of the meeting was posted at least 18 hours before the meeting at the Office of the Oakland County Water Resources Commissioner, which is the principal office of the Lake Improvement Board for Lake Oakland.



George P. Nichols
Lake Improvement Board Secretary
For Lake Oakland

Dated: November 13, 2020

Attachment 'A'

AGENDA

LAKE OAKLAND LAKE IMPROVEMENT BOARD

Tuesday, October 20, 2020 – 3:00 p.m.

Teleconference with a call-in number of 248-289-9359; Access Code 911378

1. Open Meeting
 - a. Statement to Introduce Remote Public Meetings
2. Introductions and Attendance
3. Approval of the Meeting Agenda for October 20, 2020
4. Approval of Meeting Minutes from August 18, 2020
5. Old Business
 - a. Project Work Journal
 - b. Herbicide Treatment Update
 - c. Plant Harvesting Update
6. New Business
 - a. 2020 Plant Control Activity Summary
 - b. 2020 Lake Oakland Chairman Report
7. Public Comments
 - a. Weed Control Treatment (Lake Oakland Heights)

8. Lake Oakland Invoice Ratification

- a. Ratification of Aqua-Weed Control Invoice #15072 (dated 8/28/20) for Herbicide Treatment on August 26, 2020. Mr. Sabina, supported by Mr. Nichols, to pay invoice in the amount of \$7,743.19.
- b. Ratification of Mike's Clearwater Harvesting Invoice #127 (dated 9/13/20) for harvesting work performed on Lake Oakland from September 6, 2020 to September 14, 2020. Mr. Sabina, supported by Mr. Nichols, to pay invoice in the amount of \$8,137.00.
- c. Ratification of Progressive AE Invoice #179549 (dated 9/28/20) for Lake Management Administration and Oversight. Mr. Sabina, supported by Mr. Nichols, to pay invoice in the amount of \$5,000.00.

9. Board Member Comments

10. All Else

- a. Schedule next meeting date

11. Adjournment

Attachment 'B'

2020

Beginning Balance: \$73,500.00

Date	Type	Results
5/6/2020	Survey	Significant curly-leaf pondweed growth, milfoil a little less than last year, very sparse SSW. Schedule for week of May 18.

Treatment Date	Type	Target Species	Qty	Dose Rate	Cost	Remaining Balance
5/19/2020	2,4-D ester	Eurasian Milfoil	9.25 acre(s)	150.00 lbs/acre	\$4,440.00	\$69,060.00
5/19/2020	Algae control (filamentous and planktonic)	Filamentous or Planktonic Algae	5.75 acre(s)		\$230.00	\$68,830.00
5/19/2020	Dipotassium salt of endothall for exotics	Curly-leaf Pondweed	6.00 acre(s)		\$960.00	\$67,870.00
5/19/2020	Flumioxazin and contacts	Curly-leaf Pondweed	12.25 acre(s)	100.00 ppb	\$4,287.50	\$63,582.50
		Eurasian Milfoil				
		Starry Stonewort				
5/19/2020	Flumioxazin plus copper ethanolamine complex	Starry Stonewort	1.00 acre(s)	150.00 ppb	\$425.00	\$63,157.50
5/19/2020	Triclopyr dry	Eurasian Milfoil	0.75 acre(s)	180.00 lbs/acre	\$468.75	\$62,688.75
5/19/2020	Triclopyr liquid	Eurasian Milfoil	5.50 acre(s)	3.00 gallons/acre	\$1,375.00	\$61,313.75
5/19/2020	ProcellaCOR	Eurasian Milfoil	0.00 PDU		\$0.00	\$61,313.75
Invoice 14501 Total					\$12,186.25	\$61,313.75

6/10/2020	Survey	Found some milfoil and SSW. Water temp = 78F.
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Project Work Journal
Lake Oakland

2020

Beginning Balance: \$73,500.00

Treatment Date	Type	Target Species	Qty	Dose Rate	Cost	Remaining Balance	
6/16/2020	2,4-D ester	Eurasian Milfoil	4.00 acre(s)	150.00 lbs/acre	\$1,920.00	\$59,393.75	
6/16/2020	Algae control (filamentous and planktonic)	Filamentous or Planktonic Algae	2.00 acre(s)		\$80.00	\$59,313.75	
6/16/2020	Diquat dibromide for exotics	Curly-leaf Pondweed Eurasian Milfoil	1.50 acre(s)	1.00 gallons/acre	\$225.00	\$59,088.75	
6/16/2020	Flumioxazin	Curly-leaf Pondweed Eurasian Milfoil Starry Stonewort	1.50 acre(s)	200.00 ppb	\$735.00	\$58,353.75	
6/16/2020	Flumioxazin and contacts	Curly-leaf Pondweed Eurasian Milfoil Starry Stonewort	1.00 acre(s)	100.00 ppb	\$350.00	\$58,003.75	
6/16/2020	Macro-algae control: copper and monoamine salt of endothall	Starry Stonewort	17.25 acre(s)		\$1,207.50	\$56,796.25	
6/16/2020	Triclopyr dry	Eurasian Milfoil	1.50 acre(s)	200.00 lbs/acre	\$1,041.66	\$55,754.59	
6/16/2020	Triclopyr liquid	Eurasian Milfoil	3.50 acre(s)	3.00 gallons/acre	\$875.00	\$54,879.59	
6/16/2020	ProcellaCOR	Eurasian Milfoil Nuisance Native Plants	30.00 PDU		\$3,450.00	\$51,429.59	
6/16/2020	Diquat dibromide @ 2 gal/acre	Curly-leaf Pondweed Eurasian Milfoil	0.25 acre(s)	2.00 gallons/acre	\$45.00	\$51,384.59	
					Invoice 14776 Total	\$9,929.16	\$51,384.59
7/5/2020 - 7/12/2020	Harvesting	Curly-leaf Pondweed Nuisance Native Plants Water Lillies	40.25 acre(s)		\$14,510.12	\$36,874.47	
7/5/2020 - 7/12/2020	Harvesting of starry stonewort	Chara Starry Stonewort	20.50 acre(s)		\$10,557.50	\$26,316.97	
					Invoice 120 Total	\$25,067.62	\$26,316.97

7/1/2020 Survey

Revised harvesting maps.

2020

Beginning Balance: \$73,500.00

7/9/2020 Survey

Found some significant starry stonewort - revised harvesting maps. Water = 89F.

Treatment Date	Type	Target Species	Qty	Dose Rate	Cost	Remaining Balance
7/15/2020	2,4-D ester	Eurasian Milfoil	2.25 acre(s)	150.00 lbs/acre	\$1,080.00	\$25,236.97
7/15/2020	Algae control (filamentous and planktonic)	Filamentous or Planktonic Algae	8.75 acre(s)		\$350.00	\$24,886.97
7/15/2020	Macro-algae control: copper and monoamine salt of endothall	Starry Stonewort	18.25 acre(s)		\$1,277.50	\$23,609.47
7/15/2020	Chelated Copper Complex Granular (Harpoon)	Starry Stonewort Wild Celery	1.50 acre(s)	200.00 lbs/acre	\$487.50	\$23,121.97
7/15/2020	ProcellaCOR	Eurasian Milfoil Nuisance Native Plants	9.00 PDU		\$1,035.00	\$22,086.97
7/15/2020	Diquat dibromide @ 2 gal/acre	Eurasian Milfoil Nuisance Native Plants	2.00 acre(s)	2.00 gallons/acre	\$360.00	\$21,726.97
7/15/2020	dipotassium salt of endothall/diquat-dibromide complex @ 4 gal./acre	Eurasian Milfoil Nuisance Native Plants	0.75 acre(s)		\$375.00	\$21,351.97
Invoice 14977 Total					\$4,965.00	\$21,351.97

7/21/2020 Survey

Found some starry and wild celery, small areas of milfoil.

Treatment Date	Type	Target Species	Qty	Dose Rate	Cost	Remaining Balance
7/28/2020	2,4-D ester	Eurasian Milfoil	0.75 acre(s)	150.00 lbs/acre	\$360.00	\$20,991.97
7/28/2020	Algae control (filamentous and planktonic)	Filamentous or Planktonic Algae	1.00 acre(s)		\$40.00	\$20,951.97
7/28/2020	Chelated copper complex liquid		2.00 acre(s)		\$640.00	\$20,311.97
7/28/2020	Diquat dibromide for exotics	Curly-leaf Pondweed Eurasian Milfoil	1.75 acre(s)	1.00 gallons/acre	\$262.50	\$20,049.47
7/28/2020	Macro-algae control: copper and monoamine salt of endothall	Starry Stonewort	0.50 acre(s)		\$35.00	\$20,014.47
7/28/2020	Triclopyr liquid	Eurasian Milfoil	0.25 acre(s)	3.00 gallons/acre	\$62.50	\$19,951.97
7/28/2020	Chelated Copper Complex Granular (Harpoon)	Starry Stonewort Wild Celery	7.75 acre(s)	200.00 lbs/acre	\$2,518.75	\$17,433.22
Invoice 14979 Total					\$3,918.75	\$17,433.22

Project Work Journal
Lake Oakland

2020

Beginning Balance: \$73,500.00

8/19/2020 Survey

Found some milfoil re-growth and some SSW.

Treatment Date	Type	Target Species	Qty	Dose Rate	Cost	Remaining Balance	
8/26/2020	2,4-D ester	Eurasian Milfoil	2.75 acre(s)	150.00 lbs/acre	\$1,320.00	\$16,113.22	
8/26/2020	Algae control (filamentous and planktonic)	Filamentous or Planktonic Algae	1.00 acre(s)		\$40.00	\$16,073.22	
8/26/2020	Macro-algae control: copper and monoamine salt of endothall	Starry Stonewort	6.25 acre(s)		\$437.50	\$15,635.72	
8/26/2020	Triclopyr dry	Eurasian Milfoil	1.00 acre(s)	200.00 lbs/acre	\$694.44	\$14,941.28	
8/26/2020	Triclopyr liquid	Eurasian Milfoil	10.25 acre(s)	3.00 gallons/acre	\$2,562.50	\$12,378.78	
8/26/2020	Chelated Copper Complex Granular (Harpoon)	Starry Stonewort Wild Celery	6.75 acre(s)	200.00 lbs/acre	\$2,193.75	\$10,185.03	
8/26/2020	Diquat dibromide @ 2 gal/acre	Eurasian Milfoil Nuisance Native Plants	2.75 acre(s)	2.00 gallons/acre	\$495.00	\$9,690.03	
					Invoice 15072 Total	\$7,743.19	\$9,690.03
9/6/2020 - 9/14/2020	Harvesting	Curly-leaf Pondweed Nuisance Native Plants	11.50 acre(s)		\$4,145.75	\$5,544.28	
9/6/2020 - 9/14/2020	Harvesting of starry stonewort	Chara Starry Stonewort	7.50 acre(s)		\$3,862.50	\$1,681.78	
9/6/2020 - 9/14/2020	Harvesting of starry stonewort		0.25 acre(s)		\$128.75	\$1,553.03	
					Invoice 127 Total	\$8,137.00	\$1,553.03

9/9/2020 Survey

About 50 percent done on harvest

9/15/2020 Survey

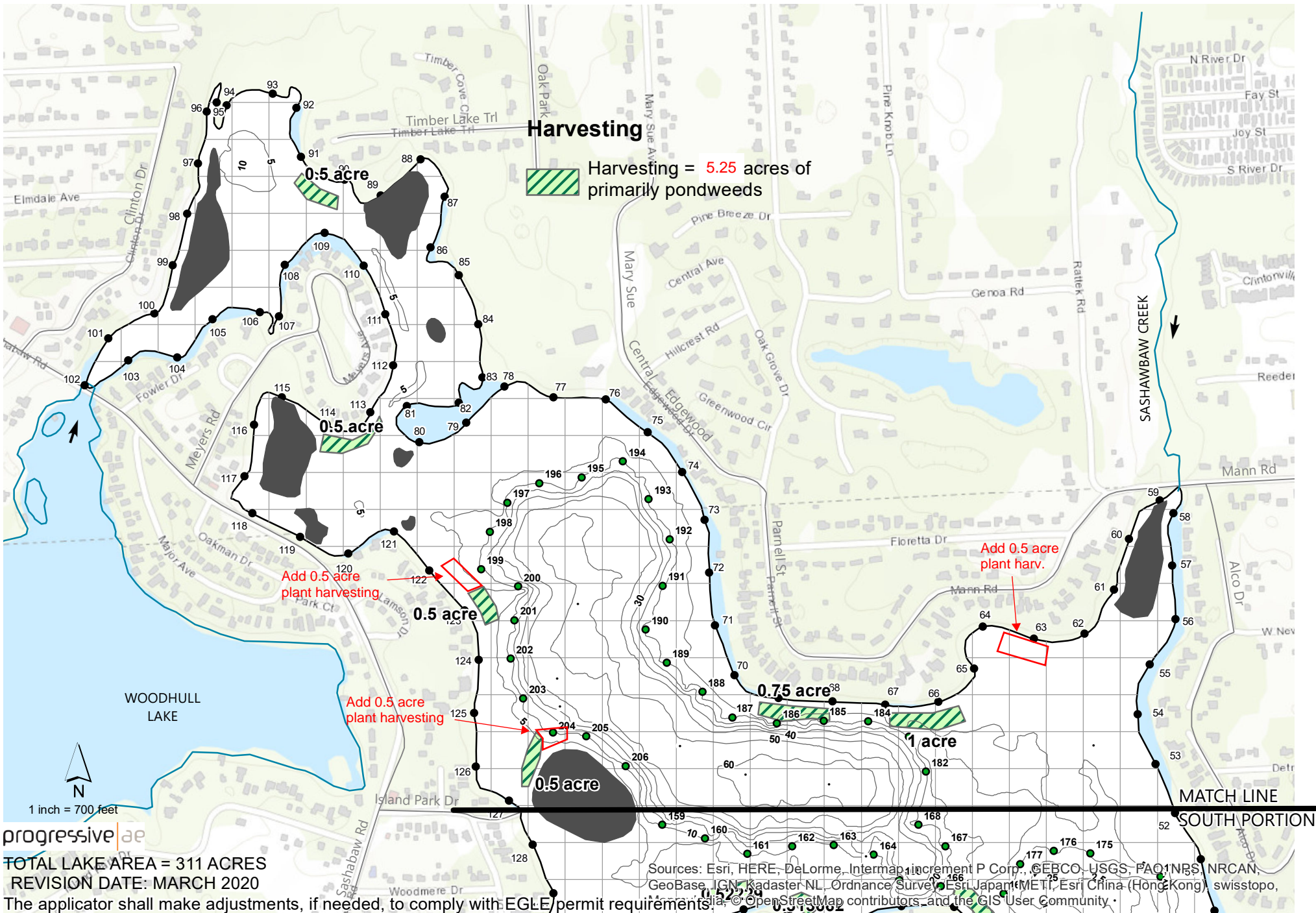
Lake looks good overall

Attachment 'C'

Attachment 'D'

LAKE OAKLAND (NORTH PORTION) OAKLAND COUNTY, MICHIGAN

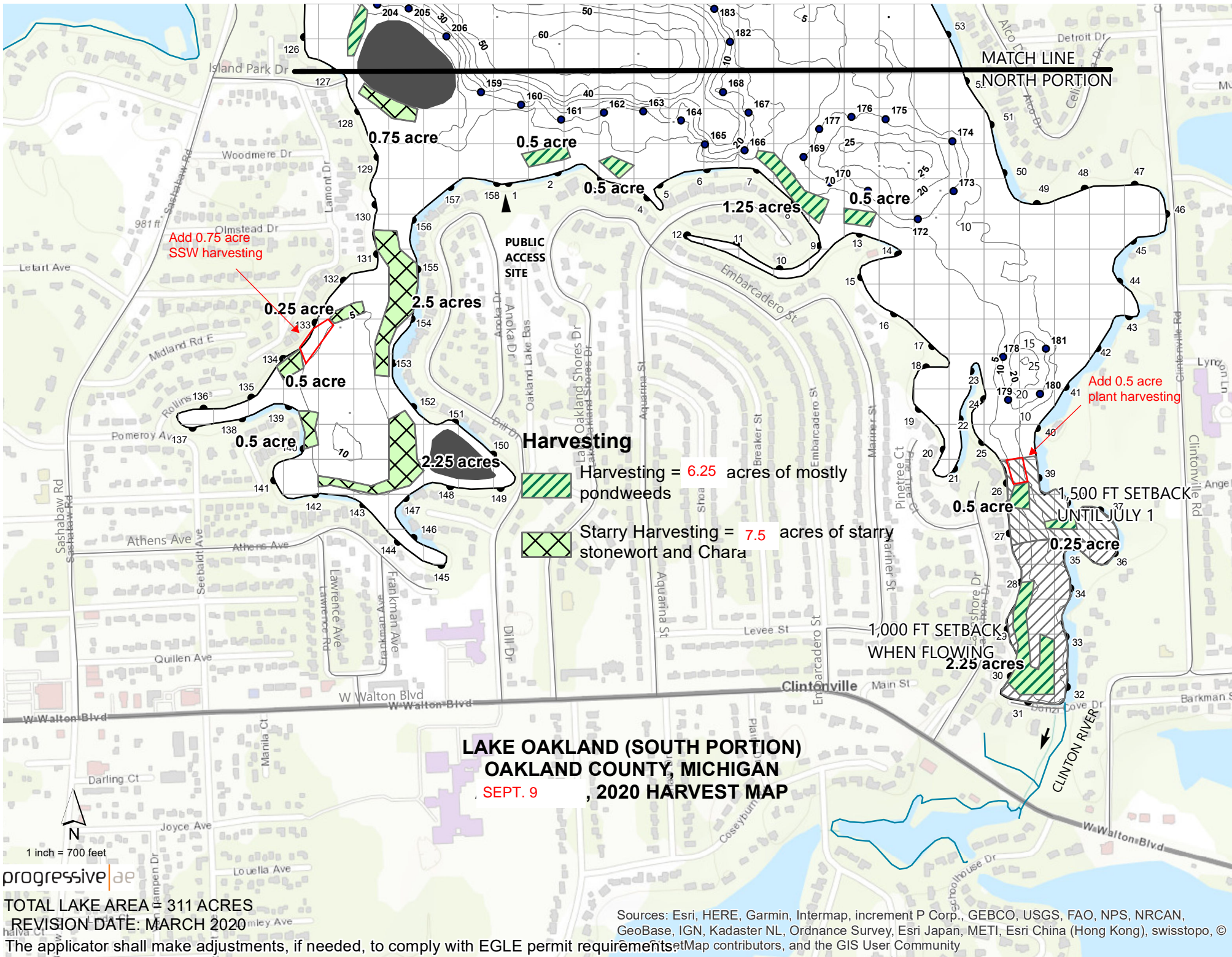
September 9, 2020 HARVEST MAP



progressive | ae
TOTAL LAKE AREA = 311 ACRES
REVISION DATE: MARCH 2020

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NBS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan (METI), Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community.

The applicator shall make adjustments, if needed, to comply with EGLE/permit requirements.



**LAKE OAKLAND (SOUTH PORTION)
OAKLAND COUNTY, MICHIGAN
SEPT. 9 , 2020 HARVEST MAP**

Harvesting
Harvesting = 6.25 acres of mostly pondweeds

Starry Harvesting
Starry Harvesting = 7.5 acres of starry stonewort and Chara

progressive | ae
TOTAL LAKE AREA = 311 ACRES
REVISION DATE: MARCH 2020

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © Map contributors, and the GIS User Community

The applicator shall make adjustments, if needed, to comply with EGLE permit requirements

Attachment 'E'

Lake Oakland Aquatic Plant Control Program 2020 Activity Summary

A publication of the Lake Oakland Improvement Board

Lake Oakland Improvement Board

One Public Works Drive
Building 95 West
Waterford, MI State Zip

Rick Sabina, Chair
Lake Oakland Resident Representative

George Nichols, Secretary
*Water Resources Commissioner's
Office Representative*

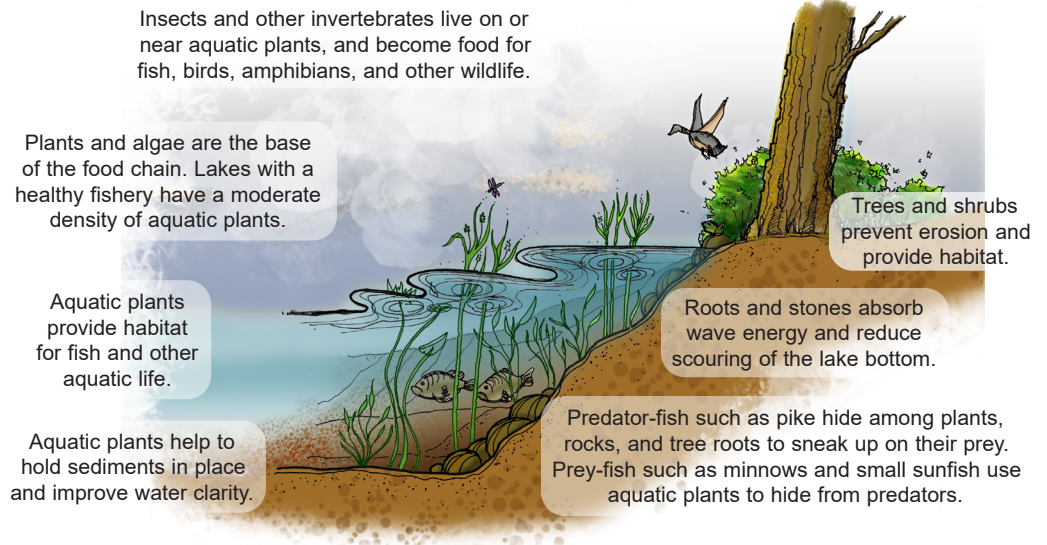
Margaret Birch, Treasurer
Waterford Township Representative

Theresa Nallamotheu
*Independence Township
Representative*

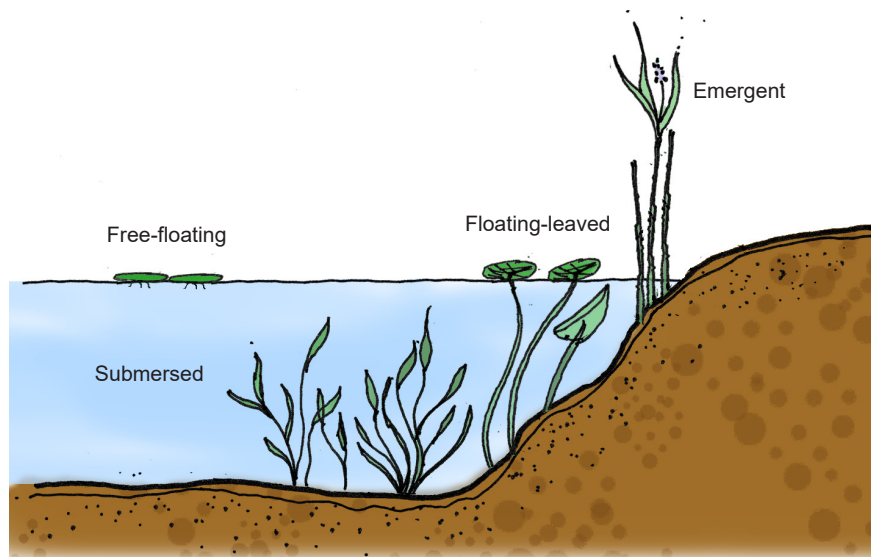
Tom Middleton
Oakland County Commissioner

For the past several years, a nuisance plant control program has been ongoing on Lake Oakland. The primary objective of the program is to prevent the spread of invasive aquatic plants while preserving beneficial plant species. This report contains an overview of plant control activities conducted on Lake Oakland in 2020.

Aquatic plants are an important component of lakes. They produce oxygen during photosynthesis, provide food, habitat and cover for fish, and help stabilize shoreline and bottom sediments.



There are four main aquatic plant groups: submersed, floating-leaved, free-floating, and emergent. Each plant group provides important ecological functions. Maintaining a diversity of aquatic plants is important to sustaining a healthy fishery and a healthy lake.



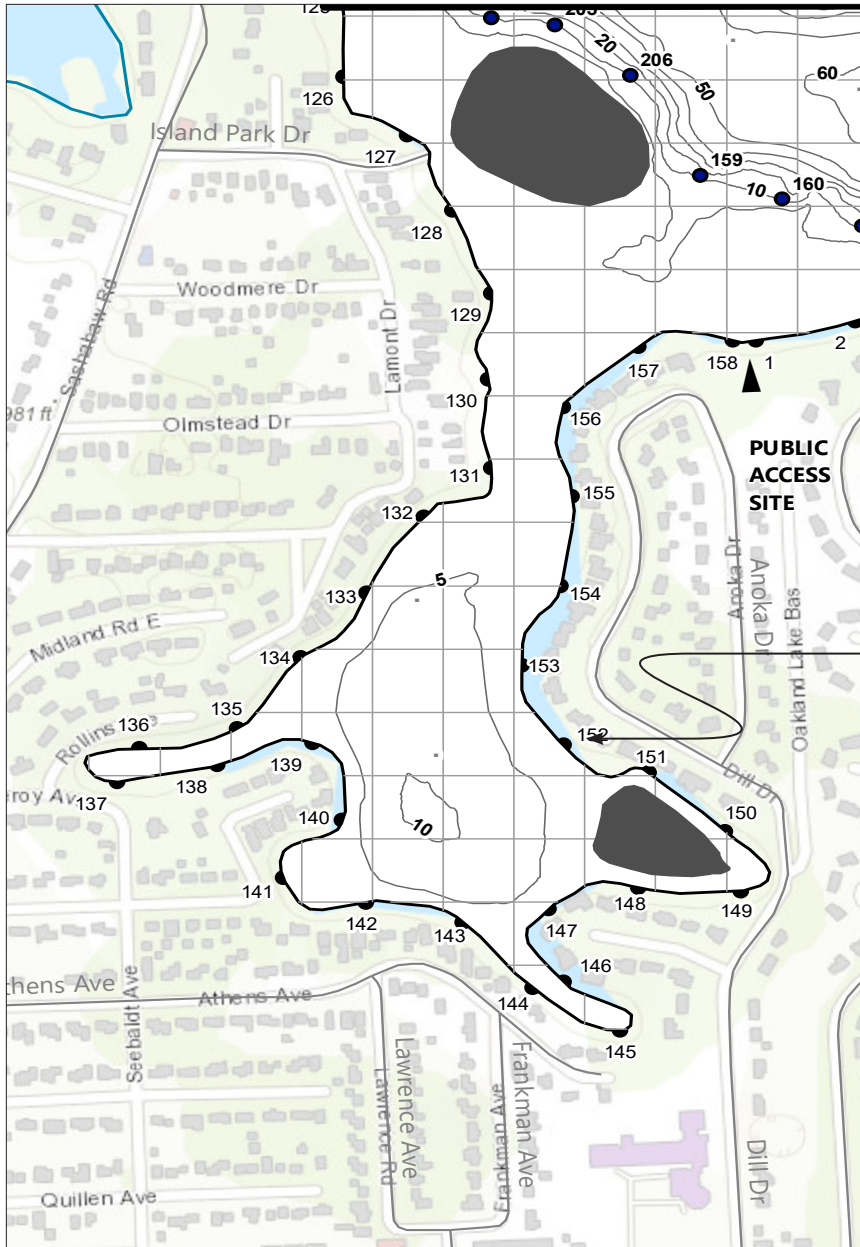
Environmental Consultant
Progressive AE

Herbicide Applicator
Aqua-Weed Control

Harvesting Contractor
Mike's Clearwater Harvesting

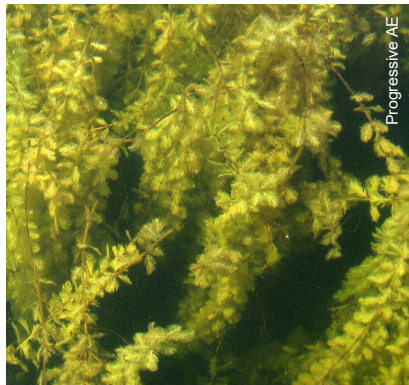
Plant control activities are coordinated under the direction of an environmental consultant, Progressive AE. Biologists from Progressive conduct GPS-guided surveys of the lake to identify problem areas, and georeferenced plant control maps are provided to the plant control contractor.

2



GPS reference points established along the shoreline and drop-off areas of Lake Oakland are used to guide plant surveys and to accurately identify the location of nuisance plant growth areas.

Plant control in Lake Oakland involves the select use of herbicides and mechanical harvesting to control invasive plant growth. Primary plants targeted for control in Lake Oakland include Eurasian milfoil and starry stonewort. Both of these plants are non-native (exotic) species that tend to be highly invasive and have the potential to spread quickly if left unchecked.



Eurasian milfoil (*Myriophyllum spicatum*)



Starry stonewort (*Nitellopsis obtusa*)

Plant control activities conducted on Lake Oakland in 2020 are summarized in the table below.

LAKE OAKLAND 2020 NUISANCE AQUATIC PLANT CONTROL SUMMARY

Work Type	Date	Plants Targeted	Acres
Survey	May 6		
Herbicide	May 19	Eurasian milfoil, curly-leaf, starry stonewort	35
Survey	June 10		
Herbicide	June 16	Eurasian milfoil, curly-leaf, starry stonewort	33
Survey	July 1		
Harvesting	July 5-12	Nuisance native plants and starry stonewort	61
Survey	July 9		
Herbicide	July 15	Eurasian milfoil and starry stonewort	27
Survey	July 21		
Herbicide	July 28	Eurasian milfoil, wild celery, starry stonewort	13
Survey	August 19		
Herbicide	August 26	Eurasian milfoil, starry stonewort, wild celery	30
Harvesting	September 6-12	Nuisance natives and starry stonewort	19
Survey	September 9		
Total			218

End-of-year Aquatic Plant Survey

4

In addition to the surveys of the lake to identify invasive plant locations, a vegetation survey of Lake Oakland was conducted on September 9 to evaluate the type and abundance of all plants in the lake. The table below lists each plant species observed during the survey and the relative abundance of each. At the time of the survey, 18 submersed species, one free-floating, two floating-leaved species, and eight emergent species were found in the lake. Lake Oakland maintains an excellent diversity of beneficial, native plants species.

LAKE OAKLAND AQUATIC PLANTS

September 9, 2020

Common Name	Scientific Name	Group	Percent of Sites Where Present
Chara	<i>Chara</i> sp.	Submersed	73
Illinois pondweed	<i>Potamogeton illinoensis</i>	Submersed	73
Slender naiad	<i>Najas flexilis</i>	Submersed	64
Wild celery	<i>Vallisneria americana</i>	Submersed	59
Thin-leaf pondweed	<i>Potamogeton</i> sp.	Submersed	47
Starry stonewort	<i>Nitellopsis obtusa</i>	Submersed	39
Large-leaf pondweed	<i>Potamogeton amplifolius</i>	Submersed	36
Bladderwort	<i>Utricularia vulgaris</i>	Submersed	33
Variable pondweed	<i>Potamogeton gramineus</i>	Submersed	22
Eurasian milfoil	<i>Myriophyllum spicatum</i>	Submersed	11
Flat-stem pondweed	<i>Potamogeton zosteriformis</i>	Submersed	5
Coontail	<i>Ceratophyllum demersum</i>	Submersed	5
Water stargrass	<i>Heteranthera dubia</i>	Submersed	4
Curly-leaf pondweed	<i>Potamogeton crispus</i>	Submersed	1
Variable-leaf milfoil	<i>Myriophyllum heterophyllum</i>	Submersed	1
Northern milfoil	<i>Myriophyllum sibiricum</i>	Submersed	1
Underwater arrowhead	<i>Sagittaria</i> sp.	Submersed	1
Richardson's pondweed	<i>Potamogeton richardsonii</i>	Submersed	1
Duckweed	<i>Lemna minor</i>	Free-floating	6
White waterlily	<i>Nymphaea odorata</i>	Floating-leaved	63
Yellow waterlily	<i>Nuphar</i> sp.	Floating-leaved	11
Swamp loosestrife	<i>Decodon verticillatus</i>	Emergent	21
Cattail	<i>Typha</i> sp.	Emergent	9
Iris	<i>Iris</i> sp.	Emergent	6
Arrowhead	<i>Sagittaria latifolia</i>	Emergent	6
Purple loosestrife	<i>Lythrum salicaria</i>	Emergent	6
Bulrush	<i>Schoenoplectus</i> sp.	Emergent	4
Pickelweed	<i>Pontederia cordata</i>	Emergent	1
Phragmites	<i>Phragmites australis</i>	Emergent	1

Attachment 'F'

2020 LAKE OAKLAND LAKE IMPROVEMENT BOARD REPORT

As we are well aware, COVID-19 has turned our 2020 upside down and the management of Lake Oakland was not spared. Regarding the latter, the late March measurements of water quality were not conducted due to the pandemic shutdown. In addition, Paul Hausler (Biologist Consultant to the Lake Board) was unable to begin his lake surveys until early May, nor was I allowed to join him on his boat for the surveys thereafter, so I travelled along behind on my pontoon. Other COVID-19 impacts included the DNR delaying their plan to conduct a fish survey of Lake Oakland until 2021, and the suspension of loosestrife beetle availability through the Kalamazoo Nature Center due to a lack of personnel (mostly summer college student hires, positions that were not filled this year due to COVID). Beetles should become available again in 2021.

Treatment of Invasive and Nuisance Weeds

May 6 Survey – May 19 Treatment

June 10 Survey – June 16 Treatment

July 9 Survey – July 15 Treatment

July 21 Survey-July 28 Treatment

August 19 Survey – August 26 Treatment

The late spring and summer of 2020 were warm ones that promoted robust aquatic plant growth in Lake Oakland, thus requiring more treatments. Immediately ahead of all 5 treatment dates, Aqua-Weed Control posted markers on the lakefront areas that were to be directly treated. It is important to mention that these postings do not specifically identify what chemicals were added at each site. In order to determine which chemicals were added near to your shoreline, lake riparians can refer to treatment maps that are posted on the “News” page of the lake board website (<http://www.lakeoaklandboard.org/home.html>). Alternatively, lake riparians can sign-up for emails with attached treatment/harvesting maps that will alert them to upcoming treatments, harvests, and board meetings (form can be found on the front page of the website; **40 riparians are enrolled**). It is also important to re-state from last year’s report that many Lakeshore Drive lakefront properties are located within 1000 feet of the Lake Oakland dams and are not allowed to be directly treated according to Michigan DNR policy, although these lakefront properties do receive some downstream effect from treated areas.

That being stated, the most problematic invasive weed in Lake Oakland continues to be milfoil, both Eurasian and a native/Eurasian hybrid species. Towards that end, a newly approved product for controlling milfoil, ProcellaCOR, was used for the first time on 16+ acres in Lake Oakland during the May 22, 2019 treatment. ProcellaCOR is more expensive than Triclopyr (the primary product used to treat milfoil in other areas of the lake), but it comes with a 3-year guarantee. This means that the supplier pays for any follow-up treatment deemed necessary in the treated area for up to 3 years following the initial application. For the 2020 season, a separate problematic 0.75 acre of milfoil bloom was treated for the first time with ProcellaCOR, as identified during the May 6, 2020 survey. However, ProCellaCOR treatment consumed much less of our annual budget this year, so we were able to conduct a 4th treatment and a second limited harvest (see below). The outcomes of ProCellaCOR treatment are dramatic and have greatly reduced the milfoil without a noticeable late season bloom in the treated areas. Treatments also focus on algae and other nuisance weeds that grow and bloom throughout the summer.

Harvest of Invasive and Nuisance Weeds

July 13 - July 18

September 9 - September 12

Beginning in 2019, the lake board decided to delay the initial harvest until after the July 4th holiday. The historic reason for an earlier harvest had been to ensure that the lake is in good shape for the festivities surrounding that holiday. However, late season growth of nuisance weeds had been a problem for the past few years, so the board strived to reserve some funds for a second late-season harvest. Outcomes of these efforts have resulted in much greater quantities of weeds harvested during the past two years:

Mid-June 2018: 24 acres weeds & 15 acres starry stonewort, **3 truckloads**, 44+ man hours

Late-July 2019: 20 acres weeds & 15 acres starry stonewort, **35 truckloads**, 280+ man hours

July/Sept 2020: 52 acres weeds & 28 acres of starry stonewort, **37 truckloads**, 365+ man hours

Since the lake board pays for harvesting by the acre, the cost of harvesting was similar between 2018 and 2019, but obviously more this year due to the second harvest. Nevertheless, it is clear that we are receiving quite a bit more bang for the buck by harvesting later in the season. Moreover, the late season emergence of celery grass and pondweed causes a nuisance for many lake riparians. This was addressed by the second harvest this year, and it is important to point out that those who reside close to the Lake Oakland dams were included in both harvests.

PURPLE LOOSESTRIFE

- **Purple loosestrife (see picture) is a large, perennial, wetland plant that can grow up to 9 feet tall.** It was introduced to the northeastern United States and Canada in the 1800s from Europe.



Figure 3. Purple loosestrife: a) inflorescence (UGA1291004); b) flowers (UGA1291005); and c) seeds (UGA1291006).

Photo taken from: BIOLOGY AND BIOLOGICAL CONTROL OF PURPLE LOOSESTRIFE. LINDA M. WILSON, MARK SCHWARZLAENDER, BERND BLOSSEY, AND CAROL BELL RANDALL. Forest Health Technology Enterprise Team—Morgantown. Publication FHTET-2004-12.

WHAT LAKE RIPARIANS CAN DO TO HELP

- **Pulling small, individual plants is feasible** (a or b in Figure 4); **pulling large plants is very difficult** (c in Figure 4). Therefore, you can effectively monitor your lakefront area for emergence of purple loosestrife. There are several properties around Lake Oakland that currently have individual blossoming loosestrife plants (b in Figure 4).



Figure 4. Purple loosestrife: a) seedling, b) one-year-old plant, and c) three-year-old plant.



Figure 5. Purple loosestrife sprouting from rootstocks amid previous year's dead stems. (UGA1291009)

Figure & photo taken from: BIOLOGY AND BIOLOGICAL CONTROL OF PURPLE LOOSESTRIFE. LINDA M. WILSON, MARK SCHWARZLAENDER, BERND BLOSSEY, AND CAROL BELL RANDALL. Forest Health Technology Enterprise Team—Morgantown. Publication FHTET-2004-12.

Here is what to do: Carefully pull (or dig) plant from ground in order to capture the entire root, which tends to grow horizontally away from the base of the stem. Let plant dry, then place in garbage (not lawn & leaf bags!).

I personally have been managing the LOEA common lakefront areas for the past 3 years, but am also asking our lakefront owners to be on the lookout for blooms in their properties and to remove them before they get too large to do so manually. **I would be glad to help you remove these invasive weeds!**

Lake Oakland Hydroacoustic Mapping and Water Quality Monitoring

The Lake Board has contracted with ProgressiveAE to conduct hydroacoustic mapping of the lake bottom and bio-volume mapping of plants in the lake. This newer technology provides updated information that is used in helping to determine treatment amount and overall management. Progressive AE is also monitoring lake water quality (clarity, chlorophyll, phosphorous, oxygen, pH) to develop a data base for our lake. The maps (<http://www.lakeoaklandboard.org/lake-facts.html>) and a final report on 2019 Lake Oakland water quality (<http://www.lakeoaklandboard.org/water-quality.html>) are available for review.

Respectfully submitted,

Rick Sabina
Chair, Lake Oakland Lake Improvement Board