Aquatic Plant Management

NOTE: Missing or incomplete fields are highlighted at the bottom of each page. You may save, close and return to your draft permit as often as necessary to complete your application. If there are no updates in 90 days, your draft is deleted

This Application has been Signed and Submitted by: i:0#.f|wamsmembership|hdharveyiii signed on 2021-02-11T18:10:25

Site or Project Name:	Kawaguesaga Lake 2021 The permit application will be saved automatically with this name
Activity:	Chemical Control Application
Eligibility: (All questions must be no for it to be considered a private pond.)	Is there more than one property owner? ◉ Yes ○ No Will there be uncontrolled surface water discharge? ○ Yes ◉ No Does the water body have public access? ◉ Yes ○ No

3200-004 Chemical Aquatic Control Application

NOTE: To be considered a private pond, a waterbody must meet all of the following requirements:

1. Confined to one property owner.
2. The pond has no uncontrolled surface water discharge.
3. No public access.

Upon submittal of your permit application, a **non-refundable $20 permit processing fee will be charged**. Additional acreage fees will be refunded if the permit request is denied or if no treatment occurs.

3200-004 Chemical Aquatic Plant Control Application

- Annually complete all pages on Form 3200-004 for chemical plant management applications. Complete form 3200-004a for large scale treatments(exceeds 10.0 acres in size or 10% of the area of the water body that is 10 feet or less in depth) as required by NR107.04(3).
  - Form 3200-004 is competed electronically through this system.
  - Form 3200-004a must be completed outside the system and uploaded to the attachments section. Please refer to this link for a copy of this form: http://dnr.wi.gov/files/pdf/forms/3200/3200-004A.pdf
- Attach a map that shows the treatment location(s), treatment dimensions and riparian landowners. If requesting WPDES coverage, attach a water body map that shows surface outflow and receiving waters.
- For a large-scale treatment, attach evidence that a public notice has been published in a regional / local newspaper and if required that a public informational meeting has been conducted as defined in NR107.04(3).
- Pay fee online.
- Sign and Submit form.
- A signed permit application certifies to the Department that a copy of the application has been provided to any affected property owner's association/district and to landowners adjacent to treatment area.

Contact Information

Applicant Information

Organization	Minocqua-Kawaguesaga Lakes Protection Association
Last Name:	Murwin
First Name:	Sally
Mailing Address:	8229 Brinkland Circle
City:	Minocqua
State:	WI
Zip Code:	54548
Email:	niwrum@charter.net
Phone Number: (xxx-xxx-xxxx)	715-356-1149
Alternative Phone Number: (xxx-xxx-xxxx)	715-499-2837

Waterbody Address

Last Name:	
First Name:	
Street Address:	8229 Brinkland Circle
City:	Minocqua
State:	WI
Zip Code:	54548
Email:	
Phone Number: (xxx-xxx-xxxx)	
Alternative Phone Number: (xxx-xxx-xxxx)	

Applicator

Name of Applicator Firm:	Schmidt's Aquatic, LLC
Applicator Certification #:	93-022613-019190
Business Location License #:	93-022613-020730
Restricted Use Pesticide #:	
Address:	7470 Sherman Rd
City:	Bancroft
State:	WI
Zip:	54921
Email:	hdhiii@schmidtsaquatic.com

Phone Number: (xxx-xxx-xxxx)	920-980-9190

Adjacent Riparian Property Owners or Other Individuals Sponsoring Removal

Individuals and organizations (e.g. Lake District, Lake Association, Property Owners Association, County Department of Recreation), sponsoring removal.

☑ Uploaded riparian owners to attachment tab

Name	Address	Phone	Email Address

Site Information - Complete

Water Body to be Treated

Waterbody Property Owners Association or Waterbody District Representative :	Minocqua-Kawaguesaga Lakes Protection Associat... ☐ None
Water Body Name:	Kawaguesaga Lake
County:	Oneida
Latitude:	45.8765
Longitude:	-89.7273
Section:	11
Township:	30
Range:	06
Direction:	◉ E ○ W
Waterbody Surface Area:	670 acres
Estimated Surface area that is 10ft or less	100 acres

Proposed Treatment Area

Area(s) Proposed for Control:

Treatment Length		Treatment Width			Estimated Acreage		Average Depth		Calculated Volume	
0	ft. x	0	ft.	÷ 43,560 ft.^{2} =	6.00	ac	5.5	ft =	33.00	ac-ft
0	ft. x	0	ft.	÷ 43,560 ft.^{2} =	6.70	ac	6.5	ft =	43.55	ac-ft
0	ft. x	0	ft.	÷ 43,560 ft.^{2} =	5.10	ac	4.5	ft =	22.95	ac-ft
				Estimated Acreage Grand Total	17.80	ac		Calculated Volume Grand Total	99.50	ac-ft

Is the area with in or adjacent to a sensitive area designated by the Department of Natural Resources.

○ Yes ◉ No

If the estimated acreage is greater than 10 acres, or is greater than 10 percent of the estimated area 10 feet or less in depth in Section II, complete and attach Form 3200-004A, Large-Scale Treatment Worksheet.

Chemical Aquatic Plant Control Information - Form 3200-004 (R 2/17)

Notice: Use of this form is required by the Department for any application filed pursuant to s. 281.17(2), Wis. Stats., and Chapters NR 107, 200 and 205, Wis. Adm. Code. This permit application is required to request coverage for pollutant discharge into waters of the state. Personally identifiable information on this form may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

Is this permit being requested in accordance with an approved Aquatic Plant Management Plan?

◉ *Yes* ○ *No*

Treatment Type:

◉ *Lake* ○ *Pond* ○ *Wetland* ○ *Marina* ○ *Other*

Goal of Aquatic Plant Control:

- ☐ Maintain navigation channel
- ☐ Maintain boat landing and carry in access
- ☐ Improve fish habitat
- ☐ Maintain swimming area
- ☑ Control of invasive exotics
- ☐ Other

Nuisance Caused By:

- ☐ Algae
- ☐ Emergent water plants (majority of leaves & stems growing above water surface, e.g. cattail, bulrushes)
- ☐ Floating water plants (majority of leaves floating on water surface, e.g., water lilies, duckweed)
- ☑ Submerged water plants (leaves & stems below surface, flowering parts may be exposed: milfoil, coontail)
- ☐ Other

List Target Plants

☐ Algae	☐ Flowering Rush	☐ Purple Loosestrife
☐ Common/Glossy Buckthorn	☐ Hybrid Cattail	☐ Reed Canary Grass
☐ Coontail	☐ Hybrid Watermilfoil	☐ Reed Manna Grass
☐ Curly-Leaf Pondweed	☐ Japanese Knotweed	☐ Starry Stonewort
☐ Duckweed	☐ Naiad	☐ Yellow Floating Heart
☐ Elodea	☐ Narrow-Leaf Cattail	☐ Yellow Iris
☑ Eurasian Watermilfoil	☐ Phragmites	☐ Pondweed

Other Target Plants:

Note: Different plants require different chemicals for effective treatment. Do not purchase chemical before identifying plants.

Chemical Control

Full Trade Name of Proposed Chemical(s)

Select Chemical Name: ProcellaCOR EC

Other (not listed above) Other:

Have the proposed chemicals been permitted in a prior year on the proposed site?

◉ *All* ○ *Some* ○ *None*

Method of Application: Injection

What were the results of the treatment?

Several sites were treated in 2020 with excellent results.

NOTE: Chemical fact sheets for aquatic pesticides used in Wisconsin are available from the Department of Natural Resources upon request.

Alternatives to Chemical Control:	Feasible?	If No, Why Not?
1. Mechanical harvesting	○ Yes ◉ No	May spread EWM
2. Manual removal	○ Yes ◉ No	Area too large
3. Sediment screens/covers	○ Yes ◉ No	Cost
4. Dredging	○ Yes ◉ No	Cost
5. Waterbody drawdown	○ Yes ◉ No	N/A
6. Nutrient controls in watershed	○ Yes ◉ No	N/A
7. Other:	○ Yes ◉ No	N/A

Note: If proposed treatment involves multiple properties, consider feasibility of EACH alternative for EACH property owner.

Will surface water outflow and/or overflow be controlled to prevent chemical loss?

○ *Yes* ◉ *No*

Is the treatment area greater than 5% of surface area?

○ *Yes* ◉ *No*

WPDES Permit Request

Is WPDES coverage being requested? Refer to http://dnr.wi.gov/topic/wastewater/aquaticpesticides.html for more information

- ○ *Yes - complete section VII with signature.*

- ◉ *No*
  - ◉ *Already have WPDES*
  - ○ *WPDES coverage not needed*

Required Attachments and Supplemental Information

Upload Required Attachments (15 MB per file limit) - Help reduce file size and trouble shoot file uploads

* indicates completion of this item is required

Note: To add additional attachments using the down arrow icon. To replace an existing file, use the 'Click here to attach file ' link. To remove additional items, select the item and press CNTRL Delete.

Riparian Owners	File Attachment	Riparians202180.xlsx
Public Notice	File Attachment	PublicNotice2021.pdf
Large Scale Worksheet	File Attachment	KawaguesagaLake2021-3200-4ASigned.pdf
Site Map	File Attachment	MinocKawa_EWM_T2021Prelim1.pdf
Site Map	File Attachment	NewspaperAffidavit2021.pdf

Fee Calculation

Chemical Control Application

1. s. NR 107.11(1), Wis. Adm. Code, lists the conditions under which the permit fee is limited to the $20 minimum charge.
2. s. NR 107.11(4), Wis. Adm. Code, lists the uses that are exempt from permit requirements.
3. s. NR 107.04(2), Wis. Adm. Code, provides for a refund of acreage fees if the permit is denied or if no treatment occurs.

If Proposed treatment is over 0.25, calculate acreage fee: (round up to nearest whole acre, to maximum of 50 acres) acres X $25 per acre = $	17.80
If proposed treatment is less than 0.25 acre, acreage fee is $0	$450.00
Basic Permit Fee (non-refundable)	$20.00
Total Fee	$470

Payment Information

Invoice Number:	WP-00027132
Payment Confirmation Number:	WS2WT3006145936
Amount Paid:	$470

Sign and Submit

Applicant Responsibilities and Certification

1. The applicant has prepared a detailed map which shows the length, width and average depth of each area proposed for the control of rooted vegetation and the surface area in acres or square feet for each proposed algae treatment.
2. The applicant understands that the Department of Natural Resources may require supervision of any aquatic plant management project involving chemicals. Under s.NR 107.07 Wis. Adm. Code, supervision may include inspection of the proposed treatment area, chemicals and application equipment before, during or after treatment. The applicant is required to notify the regional office 4 working days in advance of each anticipated treatment with the date, time, location and size of treatment unless the Department waives this requirement. Do you request the Department to waive the advance notification requirement?
   ○ **Yes** ◉ **No**
3. The applicant agrees to comply with all terms or conditions of this permit, if issued, as well as all provisions of Chapter NR 107, Wis. Adm. Code. The required application fee is attached.
4. The applicant will provide a copy of the current application to any affected property owners' association inland Lake District and, in the case of chemical applications for rooted aquatic plants, to all owners of property riparian or adjacent to the treatment area. The applicant has also provided a copy of the current chemical fact sheet for the chemicals proposed for use to any affected property owner's association or inland Lake District.
5. Conditions related to invasive species movement. The applicant and operator agree to the following methods required under s.NR 109.05(2), Wis. Adm. Code for controlling, transporting and disposing of aquatic plants and animals, and moving water:
   - Aquatic plants and animals shall be removed and water drained from all equipment as required by s.30.07, Wis. Stats., and ss. NR 19.055 and 40.07, Wis. Adm. Code.
   - Operator shall comply with the most recent Department-approved 'Boat, Gear, and Equipment Decontamination and Disinfection Protocol', Manual Code #9183.1, available at http://dnr.wi.gov/topic/invasives/disinfection.html

All portions of this permit, map and accompanying cover letter must be in possession of the chemical applicator at the time of treatment. During treatment all provisions of Chapter NR 107 107.07 and NR 107.08, Wis. Adm. Code, must be complied with, as well as the specific conditions contained in the permit cover letter.

I hereby certify that that the above information is true and correct and that copies of the application shall be provided to all affected property owners promptly and that the conditions of the permit will be adhered to. All portions of this permit, map and accompanying cover letter must be in possession of the applicant or their agent at time of plant removal. During plant removal activities, all provisions of applicable Wisconsin Administrative Rules must be complied with, as well as the specific conditions contained in the permit cover letter.

Steps to Complete the signature process

IMPORTANT: All email correspondence will be sent to the address associated with your WAMS ID).

1. Read and Accept the Responsibilities and Certification
2. Press the Initiate Signature Process button
3. Open the confirmation email for a one time confirmation code and instructions to complete the signature process.

You will receive a final acknowledgement email upon completing these steps .

☑ Check if you are signing as Agent for Applicant.

i:0#.f|wamsmembership|hdharveyiii signed on 202.

☑ I hereby certify that the above information is true and correct and that copies of this submittal have been provided to the appropriate parties named in the contact section and that the conditions of the permit and pesticide use will be adhered to.

Aquatic Plant Management

NOTE: Missing or incomplete fields are highlighted at the bottom of each page. You may save, close and return to your draft permit as often as necessary to complete your application. If there are no updates in 90 days, your draft is deleted

This Application has been Signed and Submitted by: i:0#.f|wamsmembership|hdharveyiii signed on 2021-02-11T18:03:57

Site or Project Name:	Minocqua Lake 2021 The permit application will be saved automatically with this name
Activity:	Chemical Control Application
Eligibility: (All questions must be no for it to be considered a private pond.)	Is there more than one property owner? ◉ Yes ○ No Will there be uncontrolled surface water discharge? ○ Yes ◉ No Does the water body have public access? ◉ Yes ○ No

3200-004 Chemical Aquatic Control Application

NOTE: To be considered a private pond, a waterbody must meet all of the following requirements:

1. Confined to one property owner.
2. The pond has no uncontrolled surface water discharge.
3. No public access.

Upon submittal of your permit application, a **non-refundable $20 permit processing fee will be charged**. Additional acreage fees will be refunded if the permit request is denied or if no treatment occurs.

3200-004 Chemical Aquatic Plant Control Application

- Annually complete all pages on Form 3200-004 for chemical plant management applications. Complete form 3200-004a for large scale treatments(exceeds 10.0 acres in size or 10% of the area of the water body that is 10 feet or less in depth) as required by NR107.04(3).
  - Form 3200-004 is competed electronically through this system.
  - Form 3200-004a must be completed outside the system and uploaded to the attachments section. Please refer to this link for a copy of this form: http://dnr.wi.gov/files/pdf/forms/3200/3200-004A.pdf
- Attach a map that shows the treatment location(s), treatment dimensions and riparian landowners. If requesting WPDES coverage, attach a water body map that shows surface outflow and receiving waters.
- For a large-scale treatment, attach evidence that a public notice has been published in a regional / local newspaper and if required that a public informational meeting has been conducted as defined in NR107.04(3).
- Pay fee online.
- Sign and Submit form.
- A signed permit application certifies to the Department that a copy of the application has been provided to any affected property owner's association/district and to landowners adjacent to treatment area.

Contact Information

Applicant Information

Organization	Minocqua-Kawaguesaga Lakes Protection Association
Last Name:	Murwin
First Name:	Sally
Mailing Address:	8229 Brinkland Circle
City:	Minocqua
State:	WI
Zip Code:	54548
Email:	niwrum@charter.net
Phone Number: (xxx-xxx-xxxx)	715-356-1149
Alternative Phone Number: (xxx-xxx-xxxx)	715-499-2837

Waterbody Address

Last Name:	
First Name:	
Street Address:	8229 Brinkland Cirlcle
City:	Minocqua
State:	WI
Zip Code:	54548
Email:	
Phone Number: (xxx-xxx-xxxx)	
Alternative Phone Number: (xxx-xxx-xxxx)	

Applicator

Name of Applicator Firm:	Schmidt's Aquatic, LLC
Applicator Certification #:	93-022613-019190
Business Location License #:	93-022613-020730
Restricted Use Pesticide #:	
Address:	7470 Sherman Rd
City:	Bancroft
State:	WI
Zip:	54921
Email:	hdhiii@schmidtsaquatic.com

Phone Number: (xxx-xxx-xxxx)	920-980-9190

Adjacent Riparian Property Owners or Other Individuals Sponsoring Removal

Individuals and organizations (e.g. Lake District, Lake Association, Property Owners Association, County Department of Recreation), sponsoring removal.

☑ Uploaded riparian owners to attachment tab

Name	Address	Phone	Email Address

Site Information - Complete

Water Body to be Treated

Waterbody Property Owners Association or Waterbody District Representative :	Minocqua-Kawaguesaga Lakes Protection Associat... ☐ None
Water Body Name:	Minocqua Lake
County:	Oneida
Latitude:	45.8697
Longitude:	-89.7062
Section:	11
Township:	30
Range:	06
Direction:	◉ E ○ W
Waterbody Surface Area:	1,360 acres
Estimated Surface area that is 10ft or less	200 acres

Proposed Treatment Area

Area(s) Proposed for Control:

Treatment Length		Treatment Width			Estimated Acreage		Average Depth		Calculated Volume	
0	ft. x	0	ft.	÷ 43,560 ft^2 =	13.40	ac	6.5	ft =	87.10	ac-ft

Estimated Acreage Grand Total: 13.40 ac

Calculated Volume Grand Total: 87.10 ac-ft

Is the area with in or adjacent to a sensitive area designated by the Department of Natural Resources.

○ Yes ◉ No

If the estimated acreage is greater than 10 acres, or is greater than 10 percent of the estimated area 10 feet or less in depth in Section II, complete and attach Form 3200-004A, Large-Scale Treatment Worksheet.

Chemical Aquatic Plant Control Information - Form 3200-004 (R 2/17)

Notice: Use of this form is required by the Department for any application filed pursuant to s. 281.17(2), Wis. Stats., and Chapters NR 107, 200 and 205, Wis. Adm. Code. This permit application is required to request coverage for pollutant discharge into waters of the state. Personally identifiable information on this form may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

Is this permit being requested in accordance with an approved Aquatic Plant Management Plan?

◉ *Yes* ○ *No*

Treatment Type:

◉ *Lake* ○ *Pond* ○ *Wetland* ○ *Marina* ○ *Other*

Goal of Aquatic Plant Control:

- ☐ Maintain navigation channel
- ☐ Maintain boat landing and carry in access
- ☐ Improve fish habitat
- ☐ Maintain swimming area
- ☑ Control of invasive exotics
- ☐ Other

Nuisance Caused By:

- ☐ Algae
- ☐ Emergent water plants (majority of leaves & stems growing above water surface, e.g. cattail, bulrushes)
- ☐ Floating water plants (majority of leaves floating on water surface, e.g., water lilies, duckweed)
- ☑ Submerged water plants (leaves & stems below surface, flowering parts may be exposed: milfoil, coontail)
- ☐ Other

List Target Plants

☐ Algae	☐ Flowering Rush	☐ Purple Loosestrife
☐ Common/Glossy Buckthorn	☐ Hybrid Cattail	☐ Reed Canary Grass
☐ Coontail	☐ Hybrid Watermilfoil	☐ Reed Manna Grass
☐ Curly-Leaf Pondweed	☐ Japanese Knotweed	☐ Starry Stonewort
☐ Duckweed	☐ Naiad	☐ Yellow Floating Heart
☐ Elodea	☐ Narrow-Leaf Cattail	☐ Yellow Iris
☑ Eurasian Watermilfoil	☐ Phragmites	☐ Pondweed

Other Target Plants:

Note: Different plants require different chemicals for effective treatment. Do not purchase chemical before identifying plants.

Chemical Control

Full Trade Name of Proposed Chemical(s)

Select Chemical Name: ProcellaCOR EC

Other (not listed above) Other:

Have the proposed chemicals been permitted in a prior year on the proposed site?

◉ *All* ○ *Some* ○ *None*

Method of Application: Injection

What were the results of the treatment?

Several sites were treated in 2020 with excellent results.

NOTE: Chemical fact sheets for aquatic pesticides used in Wisconsin are available from the Department of Natural Resources upon request.

Alternatives to Chemical Control:	Feasible?	If No, Why Not?
1. Mechanical harvesting	○ Yes ◉ No	May spread EWM
2. Manual removal	○ Yes ◉ No	Area too large
3. Sediment screens/covers	○ Yes ◉ No	Cost
4. Dredging	○ Yes ◉ No	Cost
5. Waterbody drawdown	○ Yes ◉ No	N/A
6. Nutrient controls in watershed	○ Yes ◉ No	N/A
7. Other:	○ Yes ◉ No	N/A

Note: If proposed treatment involves multiple properties, consider feasibility of EACH alternative for EACH property owner.

Will surface water outflow and/or overflow be controlled to prevent chemical loss?

○ *Yes* ◉ *No*

Is the treatment area greater than 5% of surface area?

○ *Yes* ◉ *No*

WPDES Permit Request

Is WPDES coverage being requested? Refer to http://dnr.wi.gov/topic/wastewater/aquaticpesticides.html for more information

- ○ *Yes - complete section VII with signature.*

- ◉ *No*
  - ◉ *Already have WPDES*
  - ○ *WPDES coverage not needed*

Required Attachments and Supplemental Information

Upload Required Attachments (15 MB per file limit) - Help reduce file size and trouble shoot file uploads

* indicates completion of this item is required

Note: To add additional attachments using the down arrow icon. To replace an existing file, use the 'Click here to attach file ' link. To remove additional items, select the item and press CNTRL Delete.

Riparian Owners	File Attachment	Riparians202180.xlsx
Public Notice	File Attachment	PublicNotice2021.pdf
Large Scale Worksheet	File Attachment	MinocquaLake2021-3200-4ASigned.pdf
Site Map	File Attachment	MinocKawa_EWM_T2021Prelim1.pdf
Site Map	File Attachment	NewspaperAffidavit2021.pdf

Fee Calculation

Chemical Control Application

1. s. NR 107.11(1), Wis. Adm. Code, lists the conditions under which the permit fee is limited to the $20 minimum charge.
2. s. NR 107.11(4), Wis. Adm. Code, lists the uses that are exempt from permit requirements.
3. s. NR 107.04(2), Wis. Adm. Code, provides for a refund of acreage fees if the permit is denied or if no treatment occurs.

If Proposed treatment is over 0.25, calculate acreage fee: (round up to nearest whole acre, to maximum of 50 acres)	13.40
acres X $25 per acre = $	$350.00
If proposed treatment is less than 0.25 acre, acreage fee is $0	
Basic Permit Fee (non-refundable)	$20.00
Total Fee	$370

Payment Information

Invoice Number:	WP-00027131
Payment Confirmation Number:	WS2WT3006145916
Amount Paid:	$370

Sign and Submit

Applicant Responsibilities and Certification

1. The applicant has prepared a detailed map which shows the length, width and average depth of each area proposed for the control of rooted vegetation and the surface area in acres or square feet for each proposed algae treatment.
2. The applicant understands that the Department of Natural Resources may require supervision of any aquatic plant management project involving chemicals. Under s.NR 107.07 Wis. Adm. Code, supervision may include inspection of the proposed treatment area, chemicals and application equipment before, during or after treatment. The applicant is required to notify the regional office 4 working days in advance of each anticipated treatment with the date, time, location and size of treatment unless the Department waives this requirement. Do you request the Department to waive the advance notification requirement?
   ○ **Yes** ◉ **No**
3. The applicant agrees to comply with all terms or conditions of this permit, if issued, as well as all provisions of Chapter NR 107, Wis. Adm. Code. The required application fee is attached.
4. The applicant will provide a copy of the current application to any affected property owners' association inland Lake District and, in the case of chemical applications for rooted aquatic plants, to all owners of property riparian or adjacent to the treatment area. The applicant has also provided a copy of the current chemical fact sheet for the chemicals proposed for use to any affected property owner's association or inland Lake District.
5. Conditions related to invasive species movement. The applicant and operator agree to the following methods required under s.NR 109.05(2), Wis. Adm. Code for controlling, transporting and disposing of aquatic plants and animals, and moving water:
   - Aquatic plants and animals shall be removed and water drained from all equipment as required by s.30.07, Wis. Stats., and ss. NR 19.055 and 40.07, Wis. Adm. Code.
   - Operator shall comply with the most recent Department-approved 'Boat, Gear, and Equipment Decontamination and Disinfection Protocol', Manual Code #9183.1, available at http://dnr.wi.gov/topic/invasives/disinfection.html

All portions of this permit, map and accompanying cover letter must be in possession of the chemical applicator at the time of treatment. During treatment all provisions of Chapter NR 107 107.07 and NR 107.08, Wis. Adm. Code, must be complied with, as well as the specific conditions contained in the permit cover letter.

I hereby certify that that the above information is true and correct and that copies of the application shall be provided to all affected property owners promptly and that the conditions of the permit will be adhered to. All portions of this permit, map and accompanying cover letter must be in possession of the applicant or their agent at time of plant removal. During plant removal activities, all provisions of applicable Wisconsin Administrative Rules must be complied with, as well as the specific conditions contained in the permit cover letter.

Steps to Complete the signature process

IMPORTANT: All email correspondence will be sent to the address associated with your WAMS ID).

1. Read and Accept the Responsibilities and Certification
2. Press the Initiate Signature Process button
3. Open the confirmation email for a one time confirmation code and instructions to complete the signature process.

You will receive a final acknowledgement email upon completing these steps .

☑ Check if you are signing as Agent for Applicant.

i:0#.f|wamsmembership|hdharveyiii signed on 202.

☑ I hereby certify that the above information is true and correct and that copies of this submittal have been provided to the appropriate parties named in the contact section and that the conditions of the permit and pesticide use will be adhered to.

State of Wisconsin
Department of Natural Resources

WORKSHEET FOR LARGE-SCALE
CHEMICAL AQUATIC PLANT TREATMENT
Form 3200-4A 3-89

NOTE: Completion of this form is required by the Department, pursuant to s. 144.025(2)(i), Wis. Stats., and Chapter NR 107, Wis. Adm. Code, once every five years for proposed treatments that would cover more than 10 acres on one lake, or more than 10 percent of that portion of the lake that is 10 feet or less in depth.

The purpose of this form is to identify the: (1) recreational needs of the property owners and visitors;
(2) value of the proposed treatment area to fish and wildlife;
(3) cause(s) of the excess plant growth problem; and
(4) short and long-term solutions to the problem.

Please furnish a detailed map(s) of the lake and its watershed. Indicate the watershed boundaries on the map. If you do not have a watershed map for the lake you wish to treat, your DNR lake management coordinator can help you locate or prepare one.

SECTION I. BACKGROUND

Name of Applicant: Minocqua - Kawaguesaga Lakes Protection Assoc ./ Sally Murwin

Date Completed: 1/31/2021

Name of Lake: Kawaguesaga Lake

SECTION II. RECREATIONAL USES

Check those uses that apply and complete the information requested:

☐ 1. SWIMMING: Indicate on your lake map the portions of the proposed treatment area that are used for swimming.
What distance from shore is needed to provide adequate swimming space? _____ feet
What is the average depth at this distance? _____ feet

☐ 2. FISHING: Indicate on your lake map any fishing areas that are within the proposed treatment area.

☐ 3. HUNTING: Indicate on your lake map any hunting areas that are within or adjacent to the proposed treatment area.

☐ 4. BOATING/NAVIGATION: Indicate on your lake map where the following boating activities take place within the proposed treatment area:
Sailing ☐ Water skiing ☐ Fishing ☐
Pleasure boating ☐ Jet skiing ☐ Other _____

☐ 5. AESTHETIC: Indicate on your lake map any wildlife or nature observation areas within the proposed treatment area.
Do you object to the aesthetic quality (appearance, odor) of the proposed treatment area? ☐ Yes ☐ No

☒ 6. OTHER: What other activities occur in the proposed treatment area? Swimming, fishing, and recreational activities take place throughout the entire lake.

SECTION III. FISH AND WILDLIFE VALUE

1. Fisheries: To maintain a quality fishery, a lake must provide good spawning, rearing and feeding habitat. Please indicate on your lake map the location of any quality fisheries habitat. (Contact your local DNR fish manager or your local fishing club for information about your lake's fishery.)
2. Wildlife: Indicate on your lake map any portions of the proposed treatment area or adjacent shoreline that are considered to be good wildlife habitat. (Constact your local DNR wildlife manager or your local wildlife or hunting club for additional information about the wildlife around (and in) your lake.)
3. Which organization(s) or individual(s) did you contact for your information? GLFWIC

SECTION IV. CAUSES OF THE PROBLEM

What are perceived to be the local or regional causes of the problem? (Check all those that apply.)

☐ A. Agricultural runoff (from barnyards or croplands) that contributes sediment, nutrients and/or bacteria to the lake.

☐ B. Urban runoff (from stormwater) that contributes sediment, nutrients and other pollutants to the lake.

☐ C. Sewage treatment or industrial discharges upstream of the lake.

☐ D. Possible faulty septic systems in the area around the lake.

☐ E. Runoff from fertilized lawns near the lake.

☐ F. Sediments contaminated with nutrients from past pollution activities.

☒ G. Naturally fertile - no known human sources of excessive sediment, nutrients or other pollutants.

☒ H. Other: Eurasian Water Milfoil was introduced into the lake.

Please identify on your watershed map the locations of any land use practices that are perceived to be contributing to excess plant growth problems in the lake.

SECTION V. SOLUTIONS

Control of aquatic plant problems can be temporarily accomplished with short-term measures, but no strategy will be successful without long-term planning to address the source of the problem. A sound plant management program should combine both short-term and long-term control strategies.

1. What level of short-term control do you wish to achieve?

   - ☐ Remove 100% of the plants in the treatment area.
   - ☒ Remove 70-99% of the plants in the treatment area.
   - ☐ Remove less than 70% of the plants in the treatment area.

2. Which plants do you wish to remove in the short-term?

   - ☐ Remove all plant species.
   - ☒ Remove specific plant species only. (Name(s) of species: Eurasian Water Milfoil)

3. How often will it be necessary to:

   A. Chemically treat? 0 times per year for algae; 0 times per year for other plants

   B. Mechanically harvest? 0 times per year

4. What long-term control alternatives have you begun to implement?

   - ☒ Developed a lake plant management plan.
   - ☐ Developed a lake protection plan.
   - ☒ Formed a Lake District, Lake Association or other organization. (Name: Minocqua - Kawaguesaga Lakes Protection)
   - ☐ Established a monitoring program for the lake.
   - ☐ Contacted the Soil Conservation Service or Land Conservation Commission to identify land use controls that are needed in the watershed.
   - ☐ Conducted a septic survey with the county sanitarian.
   - ☒ Other: Past treatments and monitoring have been shared with the WI DNR

Long-term planning can provide an organized approach to solving the problems that are affecting the water quality of your lake. Your DNR lake management coordinator, county extension agent, or regional planning commission can provide specific technical information and assistance.

SECTION VI. PUBLIC INVOLVEMENT

1. Before you conduct a large-scale chemical aquatic plant treatment, you are required to provide the public with formal notice of the planned treatment (s. NR 107.04(3), Wis. Adm. Code). Please attach evidence (e.g., newspaper clipping) that such notice has been made.

2. You are also required to conduct a public informational meeting on the proposed large-scale treatment if 5 or more individuals, organizations or local or special units of government request such a meeting within 5 days of the notice (s. NR 107.04(3), Wis. Adm. Code).

   Was a public informational meeting required for the proposed treatment? ☐ Yes ☒ No

   If yes, please attach evidence that such a meeting was held.

3. These public notice and public meeting provisions apply each year that a treatment is proposed.

NOTE: This form is to be updated once every 5 years to include new information. Modifications of the proposed treatment within the 5-year period also require re-submittal of this form if the location or target organisms are changed, or if the treatment area is expanded by more than 10 percent.

I hereby certify that the above information is true and correct and that copies of this application have been provided to the appropriate parties named in Section II of Form 3200-4, Application for Permit for Chemical Aquatic Plant Control.

Applicant's Signature: [signature] per Sally Mcrwin 2/5/2021

Please attach with map(s) to Form 3200-4, Application for Permit for Chemical Aquatic Plant Control.

State of Wisconsin
Department of Natural Resources

WORKSHEET FOR LARGE-SCALE
CHEMICAL AQUATIC PLANT TREATMENT
Form 3200-4A 3-89

NOTE: Completion of this form is required by the Department, pursuant to s. 144.025(2)(i), Wis. Stats., and Chapter NR 107, Wis. Adm. Code, once every five years for proposed treatments that would cover more than 10 acres on one lake, or more than 10 percent of that portion of the lake that is 10 feet or less in depth.

The purpose of this form is to identify the: (1) recreational needs of the property owners and visitors;
(2) value of the proposed treatment area to fish and wildlife;
(3) cause(s) of the excess plant growth problem; and
(4) short and long-term solutions to the problem.

Please furnish a detailed map(s) of the lake and its watershed. Indicate the watershed boundaries on the map. If you do not have a watershed map for the lake you wish to treat, your DNR lake management coordinator can help you locate or prepare one.

SECTION I. BACKGROUND

Name of Applicant
Minocqua - Kawaguesaga Lakes Protection Assoc ./ Sally Murwin

Date Completed
1/31/2021

Name of Lake
Minocqua Lake

SECTION II. RECREATIONAL USES

Check those uses that apply and complete the information requested:

☐ 1. SWIMMING: Indicate on your lake map the portions of the proposed treatment area that are used for swimming.
What distance from shore is needed to provide adequate swimming space? _____ feet
What is the average depth at this distance? _____ feet

☐ 2. FISHING: Indicate on your lake map any fishing areas that are within the proposed treatment area.

☐ 3. HUNTING: Indicate on your lake map any hunting areas that are within or adjacent to the proposed treatment area.

☐ 4. BOATING/NAVIGATION: Indicate on your lake map where the following boating activities take place within the proposed treatment area:
Sailing ☐ Water skiing ☐ Fishing ☐
Pleasure boating ☐ Jet skiing ☐ Other _____

☐ 5. AESTHETIC: Indicate on your lake map any wildlife or nature observation areas within the proposed treatment area.
Do you object to the aesthetic quality (appearance, odor) of the proposed treatment area? ☐ Yes ☐ No

☒ 6. OTHER: What other activities occur in the proposed treatment area? Swimming, fishing, and recreational activities take place throughout the entire lake.

SECTION III. FISH AND WILDLIFE VALUE

1. Fisheries: To maintain a quality fishery, a lake must provide good spawning, rearing and feeding habitat. Please indicate on your lake map the location of any quality fisheries habitat. (Contact your local DNR fish manager or your local fishing club for information about your lake's fishery.)
2. Wildlife: Indicate on your lake map any portions of the proposed treatment area or adjacent shoreline that are considered to be good wildlife habitat. (Constact your local DNR wildlife manager or your local wildlife or hunting club for additional information about the wildlife around (and in) your lake.)
3. Which organization(s) or individual(s) did you contact for your information? GLFWIC

SECTION IV. CAUSES OF THE PROBLEM

What are perceived to be the local or regional causes of the problem? (Check all those that apply.)

☐ A. Agricultural runoff (from barnyards or croplands) that contributes sediment, nutrients and/or bacteria to the lake.

☐ B. Urban runoff (from stormwater) that contributes sediment, nutrients and other pollutants to the lake.

☐ C. Sewage treatment or industrial discharges upstream of the lake.

☐ D. Possible faulty septic systems in the area around the lake.

☐ E. Runoff from fertilized lawns near the lake.

☐ F. Sediments contaminated with nutrients from past pollution activities.

☒ G. Naturally fertile - no known human sources of excessive sediment, nutrients or other pollutants.

☒ H. Other: Eurasian Water Milfoil was introduced into the lake.

Please identify on your watershed map the locations of any land use practices that are perceived to be contributing to excess plant growth problems in the lake.

SECTION V. SOLUTIONS

Control of aquatic plant problems can be temporarily accomplished with short-term measures, but no strategy will be successful without long-term planning to address the source of the problem. A sound plant management program should combine both short-term and long-term control strategies.

1. What level of short-term control do you wish to achieve?

   ☐ Remove 100% of the plants in the treatment area.

   ☒ Remove 70-99% of the plants in the treatment area.

   ☐ Remove less than 70% of the plants in the treatment area.

2. Which plants do you wish to remove in the short-term?

   ☐ Remove all plant species.

   ☒ Remove specific plant species only. (Name(s) of species: Eurasian Water Milfoil)

3. How often will it be necessary to:

   A. Chemically treat? 0 times per year for algae; 0 times per year for other plants

   B. Mechanically harvest? 0 times per year

4. What long-term control alternatives have you begun to implement?

   ☒ Developed a lake plant management plan.

   ☐ Developed a lake protection plan.

   ☒ Formed a Lake District, Lake Association or other organization. (Name: Minocqua - Kawaguesaga Lakes Protection)

   ☐ Established a monitoring program for the lake.

   ☐ Contacted the Soil Conservation Service or Land Conservation Commission to identify land use controls that are needed in the watershed.

   ☐ Conducted a septic survey with the county sanitarian.

   ☒ Other: Past treatments and monitoring have been shared with the WI DNR

Long-term planning can provide an organized approach to solving the problems that are affecting the water quality of your lake. Your DNR lake management coordinator, county extension agent, or regional planning commission can provide specific technical information and assistance.

SECTION VI. PUBLIC INVOLVEMENT

1. Before you conduct a large-scale chemical aquatic plant treatment, you are required to provide the public with formal notice of the planned treatment (s. NR 107.04(3), Wis. Adm. Code). Please attach evidence (e.g., newspaper clipping) that such notice has been made.

2. You are also required to conduct a public informational meeting on the proposed large-scale treatment if 5 or more individuals, organizations or local or special units of government request such a meeting within 5 days of the notice (s. NR 107.04(3), Wis. Adm. Code).

   Was a public informational meeting required for the proposed treatment? ☐ Yes ☒ No

   If yes, please attach evidence that such a meeting was held.

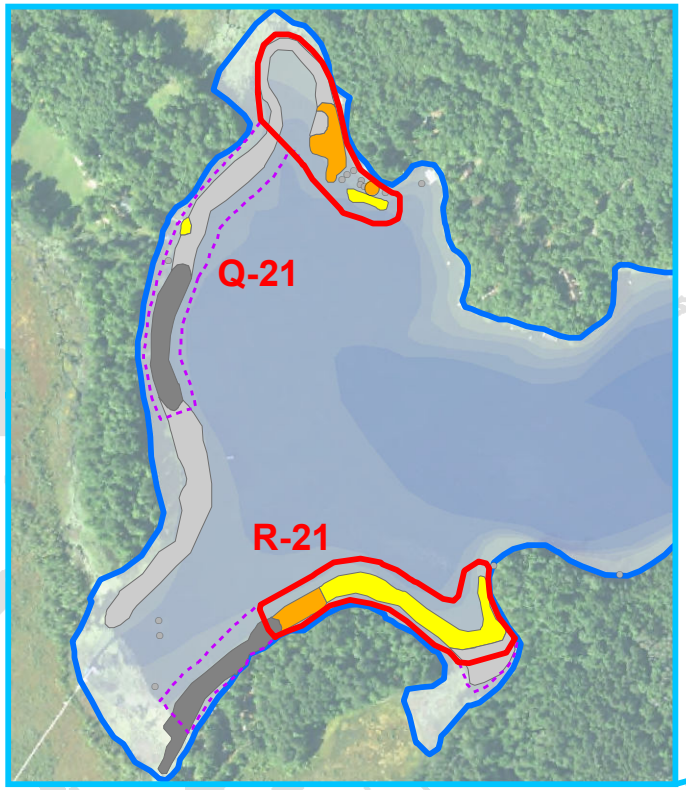
3. These public notice and public meeting provisions apply each year that a treatment is proposed.

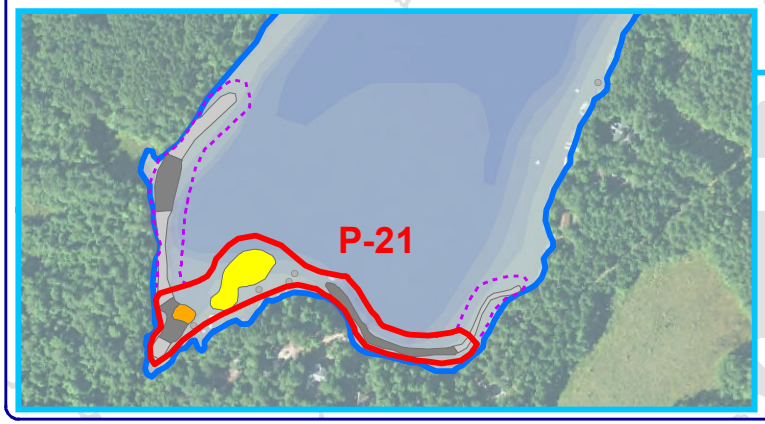
NOTE: This form is to be updated once every 5 years to include new information. Modifications of the proposed treatment within the 5-year period also require re-submittal of this form if the location or target organisms are changed, or if the treatment area is expanded by more than 10 percent.

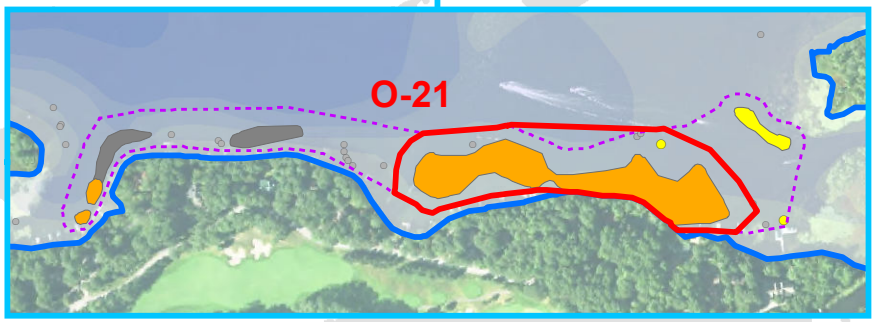
I hereby certify that the above information is true and correct and that copies of this application have been provided to the appropriate parties named in Section II of Form 3200-4, Application for Permit for Chemical Aquatic Plant Control.

Applicant's Signature — for Sally Mravik 2/5/2021

Please attach with map(s) to Form 3200-4, Application for Permit for Chemical Aquatic Plant Control.







2021 Preliminary EWM Management Strategy
ProcellaCOR Spot Treatment

Site	Proposed Acres	Avg Depth (ft)	Volume (acre-ft)	PDU Rate (per acre-ft)	PDU Total
O-21	6.9	6.5	44.9	4.0	180
Minocqua	*6.9*		*44.9*		*180*
P-21	3.6	5.5	19.8	3.5	69
Q-21	3.3	6.5	21.5	3.5	75
R-21	3.4	4.5	15.3	3.5	54
Kawaguesaga	*10.3*		*56.6*		*198*
Total	**17.2**		**101.5**		**378**

N
W E
S

5,100
Feet

Onterra LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR,1972 -digitized by Onterra
Orthophoto: NAIP, 2018
Aquatic Plants: Onterra, 2020
Map Date: October 08, 2020 - EJH


Project Location in Wisconsin

Legend

Eurasian Watermilfoil (September 14-17, 2020)

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony

Herbicide Application Area

- Final 2019
- Final 2020
- Preliminary 2021

Minocqua & Kawaguesaga
Oneida, Wisconsin

Preliminary 2021 EWM Management Strategy v.2

WARNING

PESTICIDE TREATMENT AREA

THIS WATERBODY HAS BEEN CHEMICALLY TREATED FOR:

- [x] INVASIVE PLANTS
- [ ] ALGAE
- [ ] NAVIGATION/ACCESS
- [ ] FISH REMOVAL
- [ ] MOSQUITO/BLACK FLY
- [ ] OTHER _____

PESTICIDE APPLIED	ACTIVE INGREDIENT	DATE TREATED
ProcellaCOR EC	Florpyrauxifen Benzyl	

WATER USE RESTRICTIONS APPLY AS FOLLOWS:

- TO [ ] THE ENTIRE WATERBODY
- TO [x] WATER WITHIN 2400 FT OF THIS NOTICE AND 1000 FT FROM SHORE

DO NOT USE TREATED WATER FOR THE FOLLOWING PURPOSES UNTIL:

- SWIMMING 0 Days
- CONSUMING FISH 0 Days
- DRINKING WATER 0 Days
- PET/LIVESTOCK WATER 0 Days
- HOUSEHOLD USE (dishes, laundry, etc.) 0 Days
- IRRIGATION (CROP) 1 Day
- IRRIGATION (OTHER) 1 Day

WISCONSIN DEPT. OF NATURAL RESOURCES

Wisconsin Dept. of Natural Resources
101 S. Webster St., P.O. Box 7921
Madison, WI 53707-7921
www.dnr.state.wi.us/lakes/plants/factsheets

SPONSOR Minocqua-Kawaguesaga Lakes Protection Assoc
CONTACT Sally Murwin
PHONE 715-356-1149

PUB-FH-443 2011

SPECIMEN LABEL

ProcellaCOR™ EC

A selective systemic herbicide for management of freshwater aquatic vegetation in slow-moving/quiescent waters with little or no continuous outflow: ponds, lakes, reservoirs, freshwater marshes, wetlands, bayous, drainage ditches, and non-irrigation canals, including shoreline and riparian areas in or adjacent to these sites. Also for management of invasive freshwater aquatic vegetation in slow-moving/quiescent areas of rivers (coves, oxbows or similar sites).

FLORPYRAUXIFEN-BENZYL	GROUP	4	HERBICIDE

Produced for:
SePRO Corporation
11550 North Meridian Street, Suite 600
Carmel, IN 46032, U.S.A.

EPA Reg. No. 67690-80
FPL20180226

Active Ingredient:

Florpyrauxifen-benzyl: 2-pyridinecarboxylic acid, 4-amino-3-chloro-6-(4-chloro-2-fluoro-3-methoxy-phenyl)-5-fluoro-, phenyl methyl ester	2.7%
Other Ingredients:	97.3%
TOTAL:	100.0%

Contains 0.0052 lb florpyrauxifen-benzyl per Prescription Dose Unit™ (PDU™) or 0.21 lb florpyrauxifen-benzyl/gallon. 1 PDU is equal to 3.2 fl. oz. of product.

Keep Out of Reach of Children

CAUTION

Refer to the inside of label booklet for additional precautionary information including directions for use.

Notice: Read the entire label before using. Use only according to label directions. **Before buying or using this product, read *Warranty Disclaimer* and *Misuse* statements inside label booklet. If terms are not acceptable, return at once unopened.**

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:
- Long-sleeved shirt and long pants;
- Shoes plus socks;
- Protective eyewear; and
- Waterproof gloves.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls: When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(5)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations
Users should:
- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after the first 5 minutes; then continue rinsing eye. • Call a poison control center or doctor for treatment advice.

HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency endangering health or the environment involving this product, call **INFOTRAC** at **1-800-535-5053**.

Environmental Hazards
Under certain conditions, treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants, which may cause fish suffocation. Water bodies containing very high plant density should be treated in sections to prevent the potential suffocation of fish. Consult with the State agency for fish and game before applying to public waters to determine if a permit is needed.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Shake well before using.

PRODUCT INFORMATION

ProcellaCOR EC is a selective systemic herbicide for management of freshwater aquatic vegetation in slow-moving/quiescent waters with little or no continuous outflow: ponds, lakes, reservoirs, freshwater marshes, wetlands, bayous, drainage ditches, and non-irrigation canals, including shoreline and riparian areas in or adjacent to these sites. Also for management of invasive freshwater aquatic vegetation in slow-moving/quiescent areas of rivers (coves, oxbows or similar sites).

Apply ProcellaCOR EC directly into water or spray onto emergent foliage of aquatic plants. Depending upon method of application and target plant, ProcellaCOR EC is absorbed by aquatic vascular plants through emergent or floating leaves and from water through submersed plant shoots and leaves. In-water treatments are effective in spot and partial treatment designs with relatively short exposure times (hours to several days). Species susceptibility to ProcellaCOR EC may vary depending upon time of year, stage of growth, and water movement. For best results, apply to actively growing plants. However, effective control can be achieved over a broad range of growth stages and environmental conditions. Application to mature target plants may require higher application rates and longer exposure periods to achieve control.

Resistance Management
ProcellaCOR EC is classified as a WSSA Group 4 Herbicide (HRAC Group O). Weed populations may contain or develop biotypes that are resistant to ProcellaCOR EC and other Group 4 herbicides. If herbicides with the same mode of action are used repeatedly at the same site, resistant biotypes may eventually dominate the weed population and may not be controlled by these products. Unless ProcellaCOR EC is used as part of an eradication program or in a plant management system where weed escapes are aggressively controlled, do not use ProcellaCOR EC alone in the same treatment area for submersed and emergent plant control for more than 2 consecutive years, unless used in combination or rotated with an herbicide with an alternate mode of action.

To further delay herbicide resistance consider taking one or more of the following steps:

- Use tank mixtures with herbicides from a different group if such use is permitted; Consult your local extension service or SePRO Corporation if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use, and that considers other management practices.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by using an alternative herbicide from a different group or by a mechanical method that minimizes plant fragmentation.
- If a weed pest population continues to progress after treatment with this product, switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or SePRO Corporation for additional pesticide resistance-management and/or integrated weed-management recommendations for specific weed biotypes.

Stewardship Guidelines For Use

Apply this product in compliance with Best Management Practices (BMP) that include site assessment, prescription, and implementation. BMP have been developed to ensure accurate applications, minimize risk of resistance development, and monitor concentrations in water to document levels needed for optimal performance and manage potential irrigation use. SePRO Corporation will work with applicators and resource managers to implement BMP for application and monitoring to meet management objectives and ensure compatibility with potential water uses.

Use Precautions

- There are no restrictions for recreational purposes, including swimming and fishing.

Use Restrictions

- **Obtain Required Permits:** Consult with appropriate state or local water authorities before applying this product to public waters. State or local public agencies may require permits.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- For in-water applications, the maximum single application rate is 25.0 Prescription Dose Units (PDU) per acre-foot of water with a limit of three applications per year.
- For aquatic foliar applications, do not exceed 10.0 PDU per acre for a single application, and do not apply more than 20.0 PDU total per acre per year.
- To minimize potential exposure in compost, do not allow livestock to drink treated water.
- Do not compost any plant material from treated area.
- Allow 14 days or greater between applications.
- Do not use water containing this product for hydroponic farming.
- Do not use treated water for any form of irrigation, except as described in the Application to *Water Used for Irrigation on Turf and Landscape Vegetation* section.
- Do not use for greenhouse or nursery irrigation.
- Make applications in a minimum of 10 gallons per acre (GPA) for ground and a minimum of 15 gallons per acre (GPA) for aerial applications.
- Do not apply to salt/brackish water.
- Do not apply ProcellaCOR EC directly to, or otherwise permit ProcellaCOR EC to come into contact during an application, with carrots, soybeans, grapes, tobacco, vegetable crops, flowers, ornamental shrubs or trees, or other desirable broadleaf plants, as serious injury may occur. Do not permit spray mists containing ProcellaCOR EC to drift onto desirable broadleaf plants. Further information on spray drift management is provided in the Spray Drift Management section of this label.
- For treatments out of water, do not permit spray mists containing this product to drift onto desirable broadleaf plants as injury may occur. Further information on spray drift management is provided in the *Spray Drift Management* section of this label.
- Do not allow tank mixes of ProcellaCOR EC to sit overnight. See additional tank mix restrictions below.
- Do not use organosilicone surfactants in spray mixtures of this product.
- Do not tank mix this product with malathion or methyl parathion.
- Do not make an application of malathion or methyl parathion within 7 days of an application of this product. See additional tank mix restrictions below.

Application to Water Used for Irrigation on Turf and Landscape Vegetation

To reduce the potential for injury to sensitive vegetation, follow the waiting periods (between application and irrigation) and restrictions below, and inform those who irrigate with water from the treated area. Follow local and state requirements for informing those who irrigate.

When monitoring ProcellaCOR EC concentrations, analyze water samples using an appropriate analytical method for both the active ingredient and the acid form. Use of HPLC (High-Performance Liquid Chromatography), which is also referenced as FasTEST®, is recommended.

Applications to invasive freshwater aquatic vegetation in slow-moving/ quiescent areas of rivers (coves, oxbows or similar sites).

- Users must be aware of relevant downstream use of water for irrigation that may be affected by the treatment and must ensure all label restrictions are followed. All potential downstream water intakes with irrigation practices that may be affected by the treatment must be documented and affected irrigation users notified of the restrictions associated with such treatment.

Residential and other Non-Agricultural Irrigation (such as shoreline property use including irrigation of residential landscape plants and homeowner gardens, golf course irrigation, and non-residential property irrigation around business or industrial properties. Excludes greenhouse or nursery irrigation).

- Turf Irrigation: Turf may be irrigated immediately after treatment.
- For irrigation of landscape vegetation or other forms of non-agricultural irrigation not excluded above, conduct one of the following:
  - o analytically verify that water contains less than 2 ppb (SePRO recommends use of FasTEST); or
  - o if treated area(s) have the potential to dilute with untreated water, follow the precautionary waiting periods described in the tables 1 and 2 below for in-water or foliar application.

TABLE 1: Non-agricultural irrigation following in-water application

Waiting Period (Days) for Irrigation at Specific Target Treatment Rates (PDU per acre-foot)						
Percent Area of Waterbody Treated*	1-3 PDU	>3-5 PDU	>5.0 to 10.0 PDU	>10.0 to 15.0 PDU	>15.0 to 20.0 PDU	>20.0 to 25.0 PDU
2% or less	6 hours	1 day	1 day	2 days	2 days	3 days
3 - 10%	1 day	3 days	5 days	7 days	10 days	14 days
11 - 20%	3 days	7 days	10 days	10 days	14 days	21 days
21 - 30%	5 days	10 days	14 days	21 days	28 days	35 days
>30%	7 days	14 days	21 days	28 days	35 days	35 days

* Assumes treated area(s) have the potential to dilute with untreated water. If the treated area is not projected to dilute rapidly (example: confined cove area), utilize FasTEST to confirm below 2 ppb or verify vegetation tolerance before irrigation use. Consult a SePRO Aquatic Specialist for additional site-specific recommendations.

TABLE 2: Non-agricultural irrigation following foliar application

Waiting Period (days) for Irrigation at Specific Target Treatment Rates		
Percent Area of Waterbody Treated*	5.0 PDU / acre	>5.0 to 10.0 PDU / acre
10% or less	0.5 day	1 day
11 - 20%	1 day	2 days
>20%	2 days	3 days

* Assumes treated area(s) have the potential to dilute with untreated water. If the treated area is not projected to dilute rapidly (example: confined cove area), utilize FasTEST to confirm below 2 ppb or verify vegetation tolerance before irrigation use. Consult a SePRO Aquatic Specialist for additional site-specific recommendations.

Susceptible Plants

Do not apply where spray drift may occur to food, forage, or other plantings that might be damaged. Spray drift may damage or render crops unfit for sale, use or consumption. Small amounts of spray drift that may not be visible may injure susceptible broadleaf plants. **Before making a foliar or surface spray application, please refer to your state's sensitive crop registry (if available) to identify any commercial specialty or certified organic crops that may be located nearby. At the time of a foliar or surface spray application, the wind cannot be blowing toward adjacent cotton, carrots, soybeans, corn, grain sorghum, wheat, grapes, tobacco, vegetable crops, flowers, ornamental shrubs or trees, or other desirable broadleaf plants.**

Spray Drift Management
Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to limit off-target drift movement from aerial applications:

Aerial Application:
- Aerial applicators must use a minimum finished spray volume of 15 gallons per acre.
- Drift potential is lowest between wind speeds of 2 to 10 mph. Do not apply below
  2 mph due to variable wind direction and high potential for temperature inversion. Do not apply in wind speeds greater than 10 mph.
- To minimize spray drift from aerial application, apply with a nozzle class that ensures coarse or coarser spray (according to ASABE S572) at spray boom pressure no greater than 30 psi.
- The distance of the outer most operating nozzles on the boom must not exceed 70% of wingspan or 80% of rotor diameter.
- Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.
- Do not apply under conditions of a low-level air temperature inversion.
- The maximum release height must be 10 feet from the top of the weed canopy, unless a greater application height is required for pilot safety.

Evaluate spray pattern and droplet size distribution by applying sprays containing a water-soluble dye marker or appropriate drift control agents over a paper tape (adding machine tape). Mechanical flagging devices may also be used. Do not apply under conditions of a low-level air temperature inversion. A temperature inversion is characterized by little or no wind and lower air temperature near the ground than at higher levels. The behavior of smoke generated by an aircraft-mounted device or continuous smoke column released at or near site of application will indicate the direction and velocity of air movement. A temperature inversion is indicated by layering of smoke at some level above the ground and little or no lateral movement.

Ground Application
- Ground applicators must use a minimum finished spray volume of 10 gallons per acre.
- To minimize spray drift from ground application, apply with a nozzle class that ensures coarse or coarser spray (according to ASABE S572).
- For boom spraying, the maximum release height is 36 inches from the soil for ground applications.
- Where states have more stringent regulations, they must be observed.

The applicator should be familiar with, and take into account the information covered in the following Aerial Drift Reduction Advisory (this information is advisory in nature and does not supersede mandatory label requirements.)

Aerial Drift Reduction Advisory
Information on Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size:
- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's specified pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the air stream produces larger droplets than other orientations. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type -** Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: To further reduce drift without reducing swath width, boom must not exceed 70% of wingspan or 80% of rotor diameter.

Application Height: Do not make applications at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Do not make applications below 2 mph due to variable wind direction and high inversion potential. Do not apply in wind speeds greater than 10 mph. Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Do not apply during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

USE DIRECTIONS
ProcellaCOR EC performance and selectivity may depend on dosage, time of year, stage of growth, method of application, and water movement.

Aquatic Plants Controlled: In-Water Application
Table 3 lists the expected susceptible species under favorable treatment conditions for aquatic plant control. Use of lower rates will increase selectivity on some species listed. Consultation with SePRO Corporation is recommended before applying ProcellaCOR EC to determine best in-water treatment protocols for given target vegetation.

TABLE 3. Vascular aquatic plant control with in-water application

Vascular Aquatic Plants Controlled: In-Water Application	
Common name	**Scientific name**
Floating Plants	
Mosquito fern	*Azolla* spp.
Water hyacinth	*Eichhornia crassipes*
Emersed Plants	
Alligatorweed	*Alternanthera philoxeroides*
American lotus	*Nelumbo lutea*
Floating heart	*Nymphoides* spp.
Water pennywort	*Hydrocotyle umbellata*
Water primrose	*Ludwigia* spp.
Watershield	*Brasenia schreberi*
Submersed Plants	
Bacopa	*Bacopa* spp.
Coontail[1]	*Ceratophyllum demersum*
Hydrilla[1]	*Hydrilla verticillata*
Parrotfeather	*Myriophyllum aquaticum*
Water chestnut	*Trapa* spp.
Watermilfoil, Eurasian	*Myriophyllum spicatum*
Watermilfoil, Hybrid Eurasian	*Myriophyllum spicatum X M.* spp.
Watermilfoil, Variable	*Myriophyllum heterophyllum*

[1] Higher-rate applications within the specified range may be required to control less-sensitive weeds.

Aquatic Plants Controlled: Foliar Application
Table 4 lists the expected susceptible species using labeled foliar rates (5.0 – 10.0 PDU per acre) under favorable treatment conditions for aquatic plant control. Use higher rates in the rate range on more established, dense vegetation. Consultation with SePRO Corporation is recommended before applying ProcellaCOR EC to determine best foliar treatment protocols for given target vegetation.

TABLE 4. Vascular aquatic plant control with foliar application

Vascular Aquatic Plants Controlled: Foliar Application	
Common name	**Scientific name**
Floating Plants	
Mosquito fern	*Azolla* spp.
Water hyacinth	*Eichhornia crassipes*
Emersed Plants	
Alligatorweed	*Alternanthera philoxeroides*
American lotus	*Nelumbo lutea*
Floating heart	*Nymphoides* spp.
Parrotfeather (emersed)	*Myriophyllum aquaticum*
Water pennywort	*Hydrocotyle umbellata*
Water primrose	*Ludwigia spp.*
Watershield	*Brasenia schreberi*

APPLICATION INFORMATION

Mixing Instructions

In-Water Application to Submersed or Floating Aquatic Weeds
ProcellaCOR EC can be applied undiluted or diluted with water for in-water applications. To dilute with water, it is recommended to fill the spray tank to one-half full with water. Start agitation. Add correct quantity of ProcellaCOR EC. Continue agitation while filling spray tank to required volume and during application.

Foliar Application to Floating and Emergent Weeds
Dilute ProcellaCOR EC with water to achieve proper coverage of treated plants. To dilute with water, it is recommended to fill spray tank to one-half full with water. Start agitation. A surfactant must be used with all post-emergent foliar applications. Use only surfactants that are approved or appropriate for aquatic use. For best performance, a methylated seed oil (MSO) surfactant is recommended. Read and follow all use directions and precautions on aquatic surfactant label. After adding ProcellaCOR EC and surfactant, continue agitation while filling spray tank to required volume and during application.

TANK-CLEANOUT INSTRUCTIONS

ProcellaCOR EC should be fully cleaned from application equipment prior to use for other applications. Contact a SePRO Aquatic Specialist for guidance on methods for thorough cleaning of application equipment after use of the product.

APPLICATION METHODS

In-Water Application to Submersed or Floating Aquatic Weeds
ProcellaCOR EC can be applied via trailing hose, by sub-surface injection, or surface spray as an in-water application to control weeds such as hydrilla, floating heart, water hyacinth, and other susceptible weed species. This product has relatively short exposure requirements for in-water treatments (hours to days), but treatments with high exchange and short exposure periods should be carefully planned to achieve best results. Where greater plant selectivity is desired - such as when controlling hydrilla or other more susceptible species, choose a lower dose in the specified range. A SePRO Aquatic Specialist can provide site-specific prescriptions for optimal control based on target weed, management objectives, and site conditions.

Apply ProcellaCOR EC to the treatment area at a prescription dose unit (PDU) to achieve appropriate concentrations. A PDU is a unit of measure that facilitates the calculation of the amount of product required to control target plants in 1 acre-foot of water or 1 acre for foliar applications. Per Table 5 below, 1-25 PDU are needed to treat 1 acre-foot of water, depending on target species and the percent of waterbody to be treated.

Use Table 5 to select the dose needed to treat 1 acre-foot of water.

TABLE 5: Prescription Dose Units (PDU) per acre-foot of water***

Percent Area of Waterbody Treated	Target Species			
	Eurasian Watermilfoil	Hybrid Watermilfoil	Variable Leaf Watermilfoil	Other
≤ 2%	3 - 4	4 - 5	3 - 5	3 - 25
>2 - 10%	2 - 3	3 - 5	3 - 4	3 - 20
>10 - 20%	1 - 3	3 - 4	2 - 4	3 - 15
>20 - 30%	1 - 2	2 - 3	2 - 3	2 - 10
>30%	1 - 2	2 - 3	1 - 2	1 - 5

* In all cases, user may apply up to the maximum of 25 PDU per acre-foot. Consult your SePRO Aquatics Specialist for site-specific recommendations.
** 1 PDU contains 3.17 fl. oz. of product.

To calculate the amount of product needed in fluid ounces, use the formula below:
Number of acres X average depth (feet) X PDU* X 3.17 = fluid ounces
*: from Table 5

Example Calculation:
To control hybrid watermilfoil in 2 acres of a 5-acre lake (>30% treated) with an average depth of 2 feet:
2 acres X 2 feet X 3 PDU X 3.17 = 38.04 fl. oz.

For in-water applications, the maximum single application is 25.0 PDU / acre-foot, with a limit of three applications per year. Allow 14 days or greater between applications. Product may be applied as a concentrate or diluted with water prior to or during the application process. Use an appropriate application method that ensures sufficiently uniform application to the treated area.

Foliar Application to Floating and Emergent Weeds
Apply ProcellaCOR EC as a foliar application to control weeds such as water hyacinth, water primrose, and other susceptible floating and emergent species. Use an application method that maximizes spray interception by target weeds while minimizing the amount of overspray that inadvertently enters the water.

For all foliar applications, apply ProcellaCOR EC at 5.0 to 10.0 PDU per acre. Use of a surfactant is required for all foliar applications of ProcellaCOR EC. Use only surfactants that are approved or appropriate for aquatic use. Methylated seed soil (MSO) is a recommended surfactant and is typically applied at 1.0% volume/volume. Refer to the surfactant label for use directions. For best results, apply to actively growing weeds. ProcellaCOR EC may be applied more than once per growing season to meet management objectives. Do not exceed 10.0 PDU per acre during any individual application or 20.0 PDU total per acre, per year from all combined treatments.

Foliar Spot Treatment
To prepare the spray solutions, thoroughly mix ProcellaCOR EC in water at a ratio of 5.0 to 10.0 PDU per 100 gallons (0.12 to 0.24% product) plus an adjuvant. For best results, a methylated seed oil at 1% volume/volume is the recommended spray adjuvant. When making spot application, ensure spray coverage is sufficient to wet the leaves of the target vegetation but not to the point of runoff.

Aerial Foliar Application to Floating and Emergent Weeds
Apply ProcellaCOR EC in a spray volume of 15 gallons per acre (GPA) or more when making a post-emergence application by air. Apply with coarse to coarser droplet category per S-572 ASABE standard; see NAAA, USDA or nozzle manufacturer guidelines. Follow guidelines and restrictions in the *Spray Drift Management and Aerial Drift Reduction Advisory* sections to minimize potential drift to off-target vegetation. Aircraft should be patterned per Operation Safe/PAASS program for calibration and uniformity to provide sufficient coverage and control.

Boat or Ground Foliar Application to Floating and Emergent Weeds
When applying ProcellaCOR EC by boat or with ground equipment to emergent or floating-leaved vegetation, use boom-type, backpack or hydraulic handgun equipment. Apply ProcellaCOR EC in a sufficient spray volume (e.g. 20 to 100 gpa) to provide accurate and uniform distribution of spray particles over the treated vegetation while minimizing runoff. Use higher spray volumes for medium to high density vegetation. For boom spraying, use coarse or coarser nozzle spray quality per S-572 ASABE standard; see USDA literature or nozzle manufacturer guidelines. Follow nozzle manufacturer's recommendations for nozzle pressure, spacing and boom height to provide a uniform spray pattern. Follow appropriate spray drift management information where drift potential is a concern.

TANK MIXES WITH OTHER AQUATIC HERBICIDES

DO NOT TANK MIX ANY PESTICIDE PRODUCT WITH THIS PRODUCT without first referring to the following website for the specific product: www.3206tankmix.com. This website contains a list of active ingredients that are currently prohibited from use in tank mixture with this product.

Only use products in tank mixture with this product that: 1) are registered for the intended use site, application method and timing; 2) are not prohibited for tank mixing by the label of the tank mix product; and 3) do not contain one of the prohibited active ingredients listed on www.3206tankmix.com website.

Applicators and other handlers (mixers) who plan to tank-mix must access the website within one week prior to application in order to comply with the most up-to-date information on tank mix partners.

Do not exceed specified application rates for respective products or maximum allowable application rates for any active ingredient in the tank mix.

Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels. It is the pesticide user's

responsibility to ensure that all products in the mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.
Pesticide Storage: Store in original container only. Keep container closed when not in use. Do not store near food or feed. In case of spill or leak on floor or paved surfaces, soak up with vermiculite, earth, or synthetic absorbent.
Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.
Container Handling
Non-refillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.
Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.
Triple rinse containers too large to shake (capacity > 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.
Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Warranty Disclaimer: SePRO Corporation warrants that this product conforms to the chemical description on the product label. Testing and research have also determined that this product is reasonably fit for the uses described on the product label. To the extent consistent with applicable law, SePRO Corporation makes no other express or implied warranty of fitness or merchantability nor any other express or implied warranty and any such warranties are expressly disclaimed.

Misuse: Federal law prohibits the use of this product in a manner inconsistent with its label directions. To the extent consistent with applicable law, the buyer assumes responsibility for any adverse consequences if this product is not used according to its label directions. In no case shall SePRO Corporation be liable for any losses or damages resulting from the use, handling or application of this product in a manner inconsistent with its label.

For additional important labeling information regarding SePRO Corporation's Terms and Conditions of Use, Inherent Risks of Use and Limitation of Remedies, please visit *http://seprolabels.com/terms* or scan the image below.

SePRO Corporation
11550 North Meridian Street, Suite 600
Carmel, IN 46032, U.S.A.

Florpyrauxifen-benzyl Chemical Fact Sheet

Formulations

Florpyrauxifen-benzyl was registered with the EPA for aquatic use in 2017. The active ingredient is 2-pyridinecarboxylic acid, 4-amino-3-chloro-6-(4-chloro-2-fluoro-3-methoxyphenyl)-5-fluoro-, phenyl methyl ester. The current Wisconsin-registered formulation is a liquid (ProcellaCOR™ EC) solely manufactured by SePRO Corporation.

Aquatic Use and Considerations

Florpyrauxifen-benzyl is a systemic herbicide that is taken up by aquatic plants. The herbicide is a member of a new class of synthetic auxins, the arylpicolinates, that differ in binding affinity compared to other currently registered synthetic auxins. The herbicide mimics the plant growth hormone auxin that causes excessive elongation of plant cells that ultimately kills the plant. Susceptible plants will show a mixture of atypical growth (larger, twisted leaves, stem elongation) and fragility of leaf and shoot tissue. Initial symptoms will be displayed within hours to a few days after treatment with plant death and decomposition occurring over 2 – 3 weeks. Florpyrauxifen-benzyl should be applied to plants that are actively growing; mature plants may require a higher concentration of herbicide and a longer contact time compared to smaller, less established plants.

Florpyrauxifen-benzyl has relatively short contact exposure time (CET) requirements (12 – 24 hours typically). The short CET may be advantageous for localized treatments of submersed aquatic plants, however, the target species efficacy compared to the size of the treatment area is not yet known.

In Wisconsin, florpyrauxifen-benzyl may be used to treat the invasive Eurasian watermilfoil (*Myriophyllum spicatum*) and hybrid Eurasian watermilfoil (*M. spicatum* X *M. sibiricum*). Other invasive species such as floating hearts (*Nymphoides* spp.) are also susceptible. In other parts of the country, it is used as a selective, systemic mode of action for spot and partial treatment of the invasive plant hydrilla (*Hydrilla verticillata*). Desirable native species that may also be negatively affected include waterlily species (*Nymphaea* spp. and *Nuphar* spp.), pickerelweed (*Pontederia cordata*), and arrowhead (*Sagittaria* spp.).

It is important to note that repeated use of herbicides with the same mode of action can lead to herbicide-resistant plants, even in aquatic plants. Certain hybrid Eurasian watermilfoil genotypes have been documented to have reduced sensitivity to aquatic herbicides. In order to reduce the risk of developing resistant genotypes, avoid using the same type of herbicides year after year, and utilize effective, integrated pest management strategies as part of any long-term control program.

Post-Treatment Water Use Restrictions

There are no restrictions on swimming, eating fish from treated waterbodies, or using water for drinking water. There is no restriction on irrigation of turf. Before treated water can be used for non-agricultural irrigation besides turf (such as shoreline property use including irrigation of residential landscape plants and homeowner gardens, golf course irrigation, and non-residential property irrigation around business or industrial properties), follow precautionary waiting periods based on rate and scale of application, or monitor herbicide concentrations until below 2 ppb. For agricultural crop irrigation, use analytical monitoring to confirm dissipation before irrigating. The latest approved herbicide product label should be referenced relative to irrigation requirements.

Herbicide Degradation, Persistence and Trace Contaminants

Florpyrauxifen-benzyl is broken down quickly in the water by light (i.e., photolysis) and is also subject to microbial breakdown and hydrolysis. It has a half-life (the time it takes for half of the active ingredient to degrade) ranging from 1 – 6 days. Shallow clear-water lakes will lead to faster degradation than turbid, shaded, or deep lakes.

Florpyrauxifen-benzyl breaks down into five major degradation products. These materials are generally more persistent in water than the active herbicide (up to 3 week half-lives) but four of these are minor metabolites detected at less than 5% of applied active ingredient. EPA concluded no hazard concern for metabolites and/or degradates of florpyrauxifen-benzyl that may be found in drinking water, plants, and livestock.

Florpyrauxifen-benzyl binds tightly with surface sediments, so leaching into groundwater is unlikely. Degradation products are more mobile, but aquatic field dissipation studies showed minimal detection of these products in surface sediments.

Impacts on Fish and Other Aquatic Organisms

Toxicity tests conducted with rainbow trout, fathead minnow, water fleas (*Daphnia* sp.), amphipods (*Gammarus* sp.), and snails (*Lymnaea* sp.) indicate that florpyrauxifen-benzyl is not toxic for these species. EPA concluded florpyrauxifen-benzyl has no risk concerns for non-target wildlife and is considered "practically non-toxic" to bees, birds, reptiles, amphibians, and mammals.

Florpyrauxifen-benzyl does not bioaccumulate in fish or freshwater clams due to rapid metabolism and chemical depuration.

Human Health

EPA has identified no risks of concern to human health since no adverse acute or chronic effects, including a lack of carcinogenicity or mutagenicity, were observed in the submitted toxicological studies for florpyrauxifen-benzyl regardless of the route of exposure. EPA concluded with reasonable certainty that drinking water exposures to florpyrauxifen-benzyl do not pose a significant human health risk.

For Additional Information

Environmental Protection Agency Office of Pesticide Programs
www.epa.gov/pesticides

Wisconsin Department of Agriculture, Trade, and Consumer Protection
http://datcp.wi.gov/Plants/Pesticides/

Wisconsin Department of Natural Resources
608-266-2621
http://dnr.wi.gov/lakes/plants/

National Pesticide Information Center
1-800-858-7378
http://npic.orst.edu/

Washington State Department of Ecology. 2017.
https://fortress.wa.gov/ecy/publications/documents/1710020.pdf

1.0 INTRODUCTION

Minocqua (1,339 acres) and Kawaguesaga (700 acres) Lakes are drainage lakes in Oneida County (Figure 1.0-1). Over 1,100 waterfront parcels exist on these two lakes, paying taxes on approximately 400 million dollars of property. The primary citizen-based organization leading management activities on Minocqua and Kawaguesaga Lakes is the Minocqua Kawaguesaga Lakes Protection Association (MKLPA).

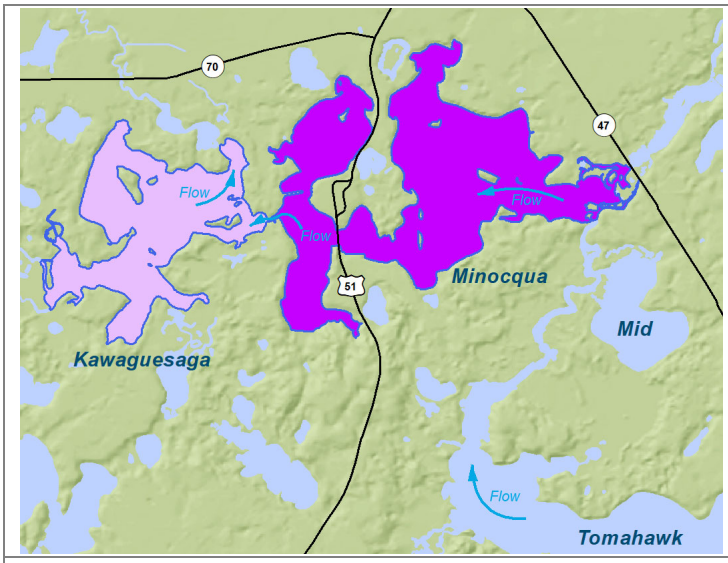


Figure 1.0-1. Minocqua and Kawaguesaga Lakes, Oneida County

Eurasian watermilfoil (EWM) was first documented in the early 2000s. The MKLPA targeted EWM populations during 2005-2015 with 2,4-D spot treatments, considered the best management practice of the time. Herbicide spot treatments with 2,4-D generally lead to short term EWM population reductions, with reductions largely being limited to a single season. This type of strategy can be analogous to the "whack-a-mole" arcade game; where areas are targeted, rebound, and then are targeted again on an every-other year basis. The repeated need for exposing the same areas of the system to herbicides as is required when engaged in an annual 2,4-D spot treatment program has gone out of favor with some lake managers due to concerns over the non-target impacts that can accompany this type of strategy. In recent years, lake managers have sought actions that achieve multiyear EWM population suppression, such as whole-lake treatments or spot treatments with chemistries theorized to require shorter exposure times. The EWM population reductions are more commensurate with the financial costs and risks of the treatment.

The MKLPA attempted a biological control activity towards EWM in 2008 by augmenting the native weevil populations that preferentially feed on EWM plants. Recent research from the University of Wisconsin – Trout Lake Station on milfoil weevils has indicated that background populations of these native weevils in most lakes is quite high, with stocking efforts having an insignificant impact on fostering a population sufficient to impact EWM. Due to the lack of success of weevil stocking on this system, the program was discontinued.

Following a 3-year (2014-2017) hand-harvesting program and cessation of herbicide management (ACEI-154-14), EWM populations in some areas increased to levels that impeded recreation and navigation. Working with the WDNR, one area of each lake was targeted with florpyrauxifen-benzyl (ProcellaCOR™ EC) spot treatments in 2019 between 3.0 and 5.0 product dosing units (PDU). The MKLPA contracted with Aquatic Plant & Habitat Services LLC to conduct pre- and post treatment aquatic plant monitoring of these treatments, with the results of these surveys contained in *2019 Eurasian Watermilfoil Surveys of Minocqua & Kawaguesaga Lakes*. Overall the treatments were highly effective at reducing EWM populations to almost zero, with native plant impacts largely contained to northern watermilfoil.

1.1 2020 EWM Control & Monitoring Strategy

The MKLPA first contracted with Onterra, LLC to conduct 2019 EWM monitoring activities primarily to assist with the development of a 2020 management strategy. The 2019 Late-Season EWM mapping survey documented EWM throughout the entire littoral zone of these two lakes, with approximately 211 acres of colonized EWM. Over 100 acres of EWM was documented at densities that impact human use and potentially alter ecosystem function (*dominant, highly dominant,* or *surface matted*) (Map 1).

A series of strategic planning meetings were conducted during the fall-winter of 2019/2020 to develop an EWM management vision for Minocqua and Kawaguesaga Lakes. The MKLPA developed a precise plan for EWM management in 2020 that included a combination of herbicide treatment and contracted hand-harvesting with Diver-Assisted Suction Harvesting (DASH). The MKLPA has also developed a longer term EWM management framework to guide the association's actions moving forward. With Onterra's assistance, the MKLPA was able to secure a WDNR AIS-Established Population Control Grant (ACEI-237-20) to help fund treatment and monitoring in 2020-2021.

In an effort to increase the flow of information between lake stakeholders and project planners, the MKLPA added an interactive web map application to their website, allowing users to see each year's late-season EWM mapping survey and management areas as they relate to their property or favorite recreation and fishing spots. Various layers can be turned on and off, and some layers can be selected and a pop-up window will provide additional information. This platform allows a better understanding of the EWM population dynamics and management strategies over time. To directly access this interactive map: (Click Here)

Herbicide Management Program

The 2019 trial florpyrauxifen-benzyl (ProcellaCOR™) spot treatments were chosen due to their high conformance with best characteristics for positive outcomes; mainly that they were larger treatment sites located in protected bays. The 2020 treatment program intended to target sites that both protected and exposed to learn if this new chemistry was able to produce EWM reductions in conditions documented to be more challenging for other herbicides.

As a part of the 2019 project with Aquatic Plant & Habitat Services LLC, four areas of EWM were preliminarily considered for treatment in 2020 with quantitative pretreatment sub-sample point-intercept aquatic plant data was collected on them in the summer of 2019 (delineated by Onterra as A-20, B-20, C-20, D-20) (Map 2, Table 1.1-1).

Table 1.1-1. Quantitative monitoring timeline of 2020 treatment sites. Sub-sample point-intercept survey sampling regime.

Site	N	Pre	Treatment	Post	Post
A-20*	64	Summer 2019	EJ 2020	August 2020	August 2021
B-20	76	Summer 2019	EJ 2020	August 2020	August 2021
C-20	75	Summer 2019	EJ 2020	August 2020	August 2021
D-20	95	Summer 2019	EJ 2020	August 2020	August 2021
E-20	83	LJ 2020	LJ 2020	August 2020	August 2021
F-20	96	LJ 2020	LJ 2020	August 2020	August 2021
G-20	46	LJ 2020	LJ 2020	August 2020	August 2021

*EJ = Early-June, LJ = Late-June, * = untreated reference*

Using the data from the 2019 Late-Season EWM Mapping survey, the MKLPA EWM Committee decided to also include three additional high density EWM populations within high recreational use areas to the preliminary 2020 herbicide treatment plan (E-20, F-20, G-20). The WDNR advised that if grant funds were to be used for this relatively new herbicide use pattern, quantitative evaluation would need to occur on all sites. Postponing treatment of the three additional sites to late-June to allow for pretreatment native plant data was recommended (Table 1.1-1). Further, the importance of *year after treatment* (2021) quantitative and qualitative data collection was conveyed and added into this project. This included collecting of additional sub-sample point-intercept data for the sites treated in 2019 again during the late-summer of 2020 (Map 2).

In early February 2020, the MKLPA applied for the necessary WDNR permits to treat seven areas totaling 96 acres. Following WDNR review, Site A-2020 (19.8 acres in Huber Bay) was removed in accordance with the following statement: *Fish Management staff at DNR would like to minimize the amount of fish habitat removed in any given year. This is especially important while the walleye restoration effort is taking place on Minocqua and Kawaguesaga.* This site was monitored as originally planned, serving as a reference site.

Hand-Harvesting and Diver Assisted Suction Harvesting (DASH)

In addition to the 2020 herbicide management program, the MKLPA developed a multi-pronged approach to EWM management using non-herbicide methods. As part of an Integrated Pest Management (IPM) Program, areas that are targeted for herbicide treatment 2019 would be targeted for follow-up hand-harvesting with traditional hand-harvesting methods. The remaining EWM in these areas is likely to be relatively minimal and spread out, therefore the use of DASH equipment was thought to be too cumbersome and restrictive in this scenario. This strategy would preserve the gains made by the herbicide treatment program.

Hand-harvesting of EWM with DASH can be an effective management tool particularly when targeting small or rebounding populations like those discussed above. As the target EWM colony becomes larger and denser, it becomes more difficult to manage with DASH especially considering the cost of implementation. Some colonies are far too large and dense to realistically manage with this tool. The MKLPA also developed a trial project for 2020 involving hand-harvesting with DASH on areas not targeted with herbicide treatment. Building off the lessons learned implementing DASH around that state and on the Minocqua and Kawaguesaga system over the past few years, the MKLPA selected a handful of representative EWM populations to implement trial DASH methodologies on in 2020. This included sites that are 1) small and dense, 2) large and moderately dense, and 3) large and low-density. Monitoring the EWM populations before and after, within the context of how much diver time was spent, will allow the MKLPA to continue to learn about using DASH as an EWM management tool and how best to utilize moving forward.

1.2 Pretreatment Confirmation and Refinement Survey

The Pretreatment Confirmation & Refinement Surveys were conducted at two separate intervals. For the three sites with 2019 pretreatment sub-sample point-intercept data, this survey occurred on June 5, 2020. This meander-based survey investigated for colonial expansion, reduced occurrence, growth stage of the EWM (and native plants), application area specifies (e.g. average depth and extents), and other aspects that would change treatment plan. The EWM in the treatment area contained active growth with a high amount of biomass. These plants were actively growing, further along than most area lakes that

Onterra had surveyed up until that point in time. Native aquatic plant growth in the treatment area was low, mainly comprised of pondweed species. Water temperatures taken at mid-depth were approximately 65°F at all sites. An underwater camera transect was completed through the targeted area which can be viewed on Onterra's YouTube webpage (Click Here). Based upon the survey, no modifications were made to the treatment strategy. The field crew also delivered the herbicide concentration monitoring supplies to volunteers from the MKLPA during the visit. Map 3 reflects the final treatment strategy using ProcellaCOR™ with an application rate of 3.0-4.5 product dosing units (PDU) over three sites totaling 40.7 acres. The herbicide application was completed on June 15, 2020 by Schmidt's Aquatic, LLC. The applicator noted light winds (3 mph) and a surface water temperature of 64°F at the time of the treatment.

Onterra ecologists completed the second pretreatment confirmation and refinement survey on June 24, 2020. The main purpose of this site visit was to conduct the pretreatment sub-sample point-intercept (PI) data to help understand the change in occurrence of EWM and native plants following the treatment. Also at each sub-sample PI location that contained invasive watermilfoil, a single 12-inch growing tip (apical meristem) was collected and processed as part of a genetic testing component of the project, which will be discussed later in this report. EWM is actively growing at this time of the year, with the crew noting that the plants were starting to surface mat and flower (Photo 1.2-1). Based upon the survey, no modifications were made to the treatment strategy. Map 3 reflects the final treatment strategy using ProcellaCOR™ with an application rate of 3.5-5.0 PDUs over three sites totaling 35.5 acres. The herbicide application was completed on June 30, 2020 by Schmidt's Aquatic, LLC. The applicator noted light to moderate winds (3-4 mph on Kawaguesaga, 5-8 mph on Minocqua) and a surface water temperature of 73°F at the time of the treatment.

Photo 1.2-1. Late-June 2020 pretreatment EWM survey on Lake Kawaguesaga. Photo credit Onterra.

1.3 Professional Hand-Harvesting Actions

The MKLPA contracted with Aquatic Plant Management, LLC in 2020 to provide professional hand-harvesting services. The MKLPA EWM Committee created a site prioritization methodology that considered EWM density from the 2019 Late Season EWM Mapping Survey, traffic patterns, and distance from herbicide management sites. Through a total of 335 dives on 52 sites around Minocqua and Kawaguesaga Lakes, over 2,000 cubic feet of EWM were removed by APM in 2020. Details of hand-harvesting effort and amount of EWM removed on a site-by-site basis can be accessed on the MKLPA's interactive map and can be found in Appendix A.

Table 1.3-1. 2020 Hand-harvest summary

	Number of Sites	Number of Dives	Underwater Time (hours)	EWM Removed (cubic ft)
Traditional HH	9.0	71.0	76.6	200.5
DASH	43.0	264.0	337.8	1,938.5
	52.0	**335.0**	**414.4**	**2,139.0**

HH = Hand-Harvesting, DASH = Diver Assisted Suction Harvesting

2.0 MONITORING RESULTS

It is important to note that two types of surveys are discussed in the subsequent materials: 1) point-intercept surveys and 2) EWM mapping surveys. The point-intercept survey provides a standardized way to gain quantitative information about a lake's aquatic plant population through visiting predetermined locations and using a rake sampler to identify all the plants at each location. The survey methodology allows comparisons to be made over time, as well as between lakes. It is common to see a particularly plant species, such as EWM, very near the sampling location but not yield it on the rake sampler. Particularly in low-density colonies such as those designated by Onterra as *highly scattered* and *scattered*, large gaps between EWM plants may exist resulting in EWM not being present at a particular pre-determined point-intercept sampling location in that area.

The point-intercept survey can be applied at various scales. The point-intercept survey is most often applied at the whole-lake scale. The whole-lake point-intercept survey was last conducted on Minocqua and Kawaguesaga Lakes in 2017. If a smaller area is being studied, a modified and finer-scale point-intercept sampling grid may be needed to produce a sufficient number of sampling points for comparison purposes. This sub-sample point-intercept survey methodology is often applied over management areas such as herbicide application sites. This type of sampling is used within this project on all treatment sites as discussed above and outlined on Map 2.

While the point-intercept survey is a valuable tool to understand the overall plant population of a lake, it does not offer a full account (census) of where a particular species exists in the lake. During the EWM mapping survey, the entire littoral area of the lake is surveyed through visual observations from the boat (Photo 2.0-1). Field crews supplement the visual survey by deploying a submersible camera along with periodically doing rake tows. The EWM population is mapped using sub-meter GPS technology by using either 1) point-based or 2) area-based methodologies. Large colonies >40 feet in diameter are mapped using polygons (areas) and are qualitatively attributed a density rating based upon a five-tiered scale from *highly scattered* to *surface matting*. Point-based techniques were applied to AIS locations that were considered as *small plant colonies* (<40 feet in diameter), *clumps of plants*, or *single or few plants*.

Photo 2.0-1. EWM mapping survey on a Waushara County, WI lake. Photo credit Onterra.

Overall, each survey has its strengths and weaknesses, which is why both are utilized in different ways as part of this project.

2.1 Quantitative Monitoring: Sub-sample point-intercept Survey

2020 Herbicide Treatment Sites

Figure 2.1-1 investigates the aquatic plant data at all sites treated in 2020. These data indicate a high level of EWM control, with no EWM being located from any application area post treatment. Relatively small changes in the native aquatic plant community were observed, particularly for the non-dicot species. When lumped into an aggregate dataset, all dicot species in treatment areas declined to some degree. The most concerning non-target impacts were the 100% reduction in northern watermilfoil.

Aside from the direct impact of the herbicide, there are a few factors that could have resulted in the changes observed. Interannual changes in growing conditions could have influenced plant populations. The changes could be related to competitive release, as native aquatic plants complete with each other in the absence of EWM.

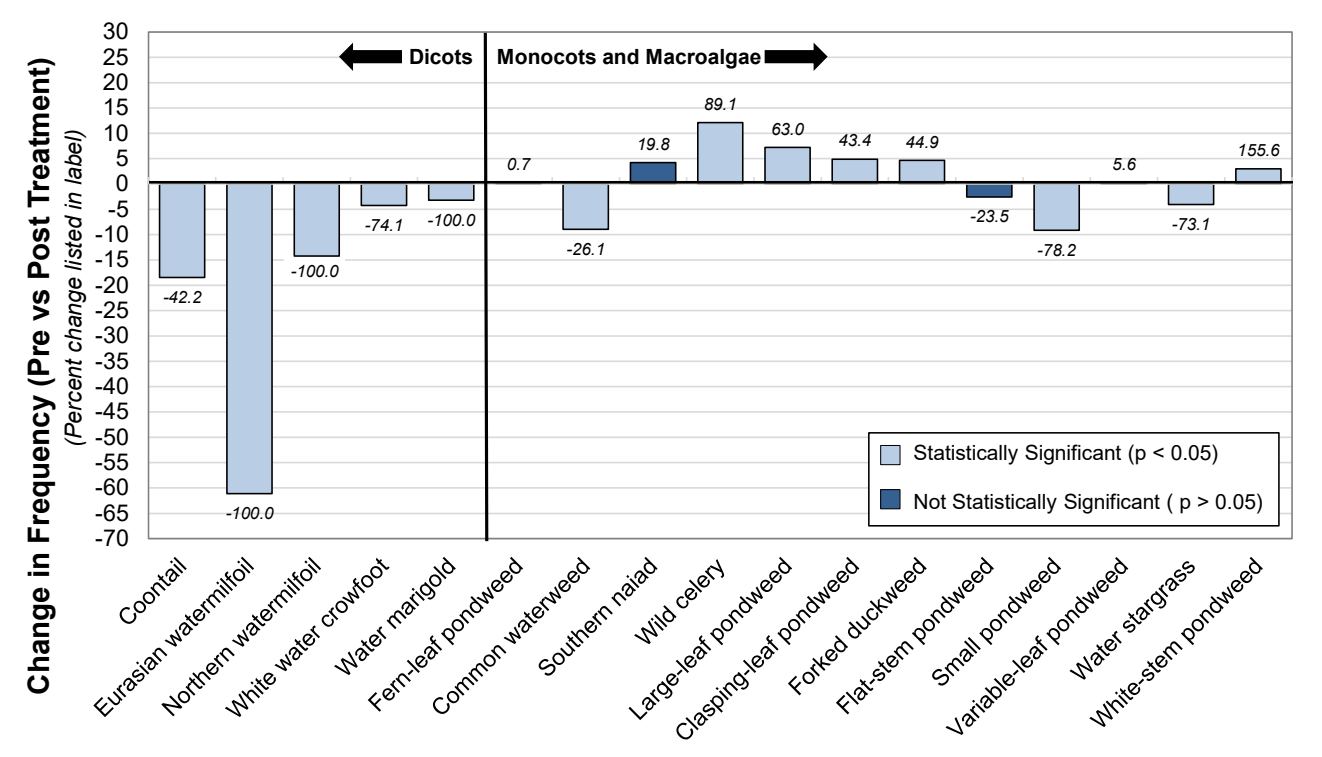


Figure 2.1-1. Frequency of occurrence of aquatic plants from all 2020 treatment sites. Bar chart data shown on figure indicates magnitude of change, labels indicate percent change. Statistical differences based upon Chi-square (α = 0.05). N=471. Excludes A-20.

Figures 2.1-2 through 2.1-6 will examine site-specific changes in select aquatic plant species. Appendix B includes a full matrix of the point-intercept sub-sample survey results.

Eurasian watermilfoil was the most abundant plant within these sites prior to treatment and was reduced to zero following treatment (Figure 2.1-2). Untreated site A-20 was in proximity to B-20 and was likely also exposed to herbicide through dissipation. This concept will be discussed in the following sections. EWM was located at a few sampling locations in this site post treatment, but still saw a large decline in population.

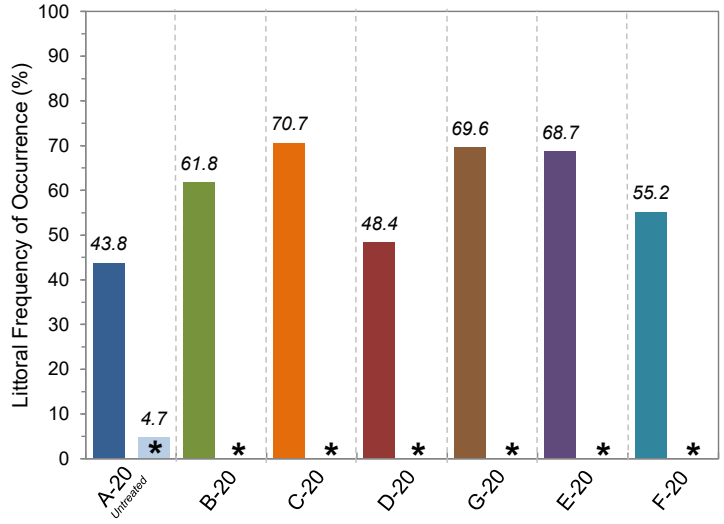


Figure 2.1-2. Littoral frequency of occurrence of Eurasian watermilfoil. N=535

Photograph 2.1-1. Eurasian watermilfoil (*Myriophyllum spicatum*). Photo credit Onterra.

Northern watermilfoil is closely related to EWM, even being able to cross pollinate and form hybrid varieties. This species is sensitive to the herbicide designed for EWM control. In all treatment sites, including the untreated reference, northern watermilfoil populations were reduced to zero (Figure 2.1-3).

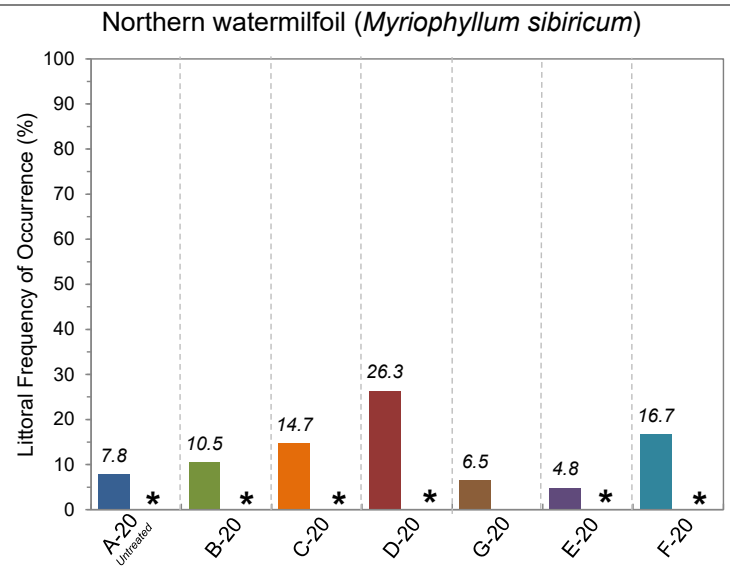


Figure 2.1-3. Littoral frequency of occurrence of northern watermilfoil. N=535

Photograph 2.1-2. Northern watermilfoil (*Myriophyllum sibiricum*). Photo credit Onterra.

Prior to treatment, water marigold (*Bidens beckii*) was found in low abundance in some of the treatment sites and was absent in other treatment sites. This species was not found post treatment in any of the treated sites, but was located at the same number of sampling locations as pretreatment in A-20.

Statistically valid reductions in coontail populations occurred in four of the six treated sites, although the magnitude of reductions was relatively minimal (Figure 2.1-4). Another largely un-rooted species, common waterweed, had statistically valid population reductions in three of the six sites (Figure 2.1-5).

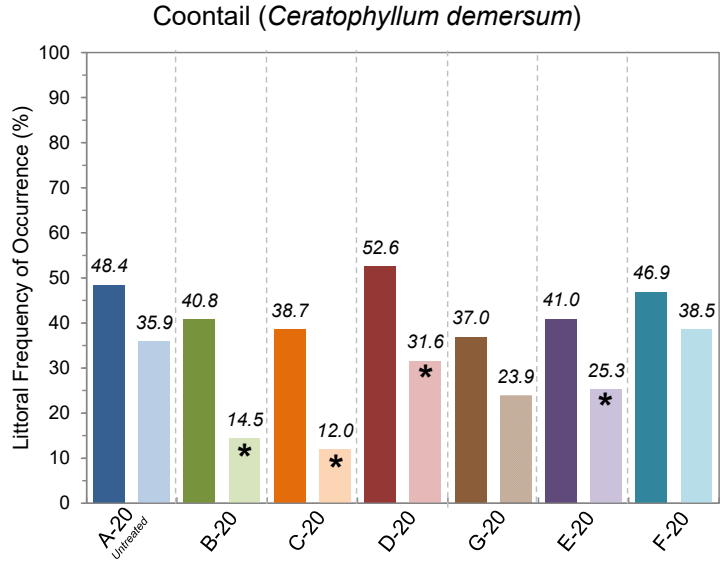


Figure 2.1-4. Littoral frequency of occurrence of coontail. N=535

Photograph 2.1-3. Coontail (*Ceratophyllum demersum*). Photo credit Onterra.

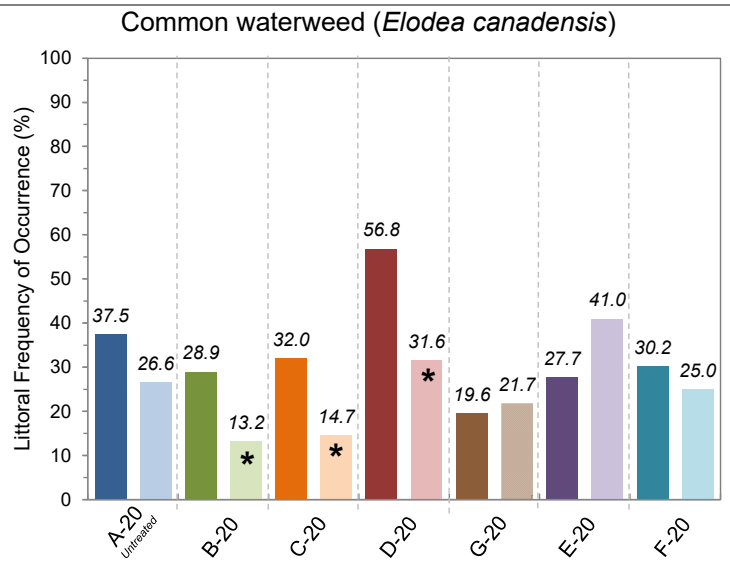


Figure 2.1-5. Littoral frequency of occurrence of common waterweed. N=535

Photograph 2.1-4. Common waterweed (*Elodea canadensis*) Photo credit Onterra.

Many pondweed species (*Potamogeton* spp.) were located within the 2020 treatment sites. Fern pondweed was the most abundant pondweed species and is known to be sensitive to some herbicides (e.g. endothall). Site B-20 had a statistically valid reduction and sites G-20 and E20 had statistically valid increases (Figure 2.1-6). Large-leaf pondweed (*Potamogeton amplifolius*) populations remained stable in all treatment sites, except a statistically valid increase was noted in site F-20. White-stem pondweed (*P. richardsonii*) had statistically valid increases in two sites, and no change in the other sites. Small pondweed (*P. berchtoldii, P. pusillus*) populations had statistically valid decreases in two sites and no change in other sites.

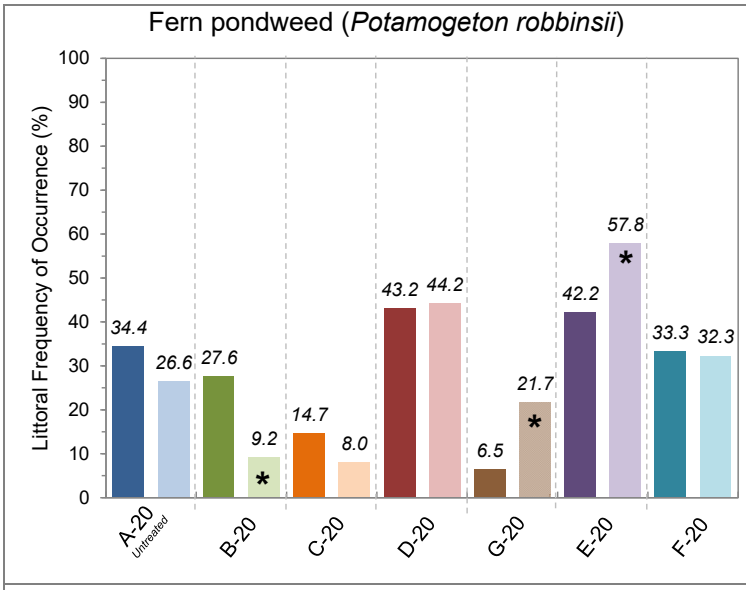


Figure 2.1-6. Littoral frequency of occurrence of fern pondweed. N=535

Photograph 2.1-5. Fern pondweed (Potamogeton robbinsii). Photo credit Onterra.

Figure 2.1-7 shows the number of littoral sampling locations during each of the point-intercept sub-sample surveys, along with the distribution of what percentage of sites contained either native plants, EWM, or both. As stated above, none of the treated sites contained EWM post treatment. The amount of sampling locations with native plants decreased the most in C-20, with all other sites having relatively similar metrics before and after treatment.

Figure 2.1-8 shows a semi-quantitative analysis of the abundance of aquatic plants through looking at total rake fullness ratings (i.e. how full of plants is the sampling rake at each location) and overall frequency of sampling locations with vegetation (labeled frequency). Overall aquatic plant abundance decreased in all sites, largely as a function of the removal of EWM but also could be related to declines in native plant abundance. These data also show that late-summer 2020 biomass was moderate to high in all the treatment sites, an important metric for fish managers when evaluating macrophyte habitat at key times of the year (i.e. spring and fall).

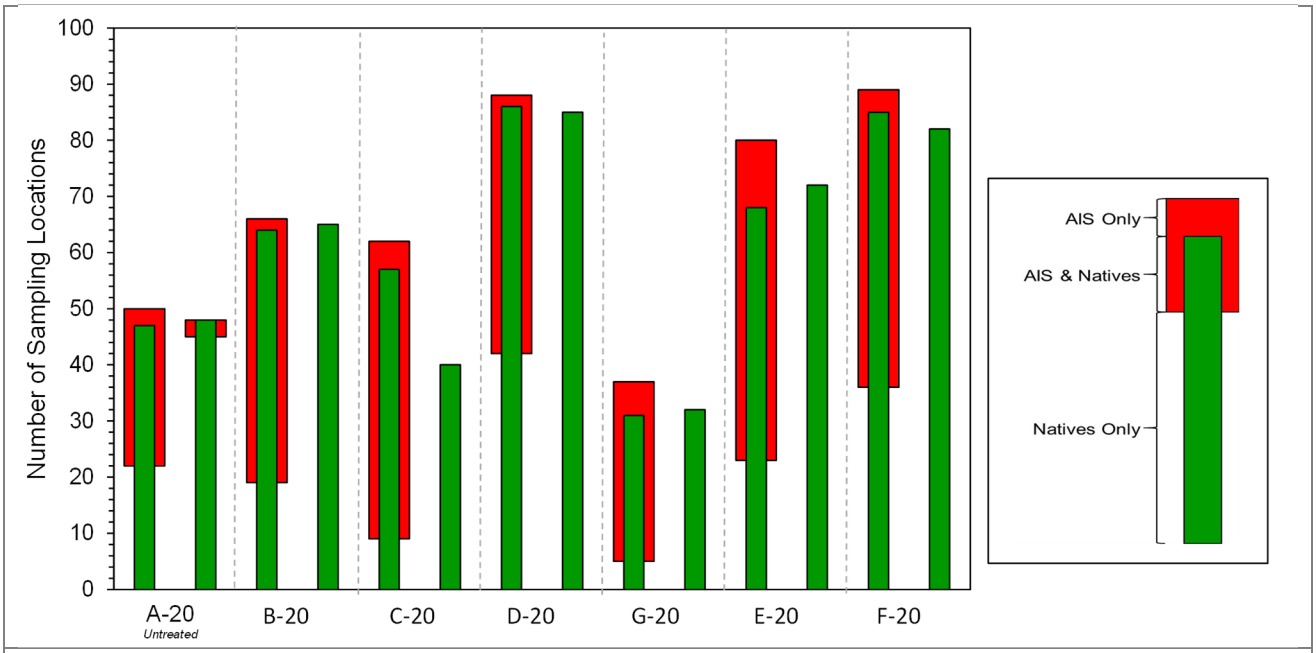


Figure 2.1-7. Number of point-intercept sampling locations that contained native plants, EWM, or native plants and EWM during pre- and post treatment sub-sample point-intercept survey surveys. N=535

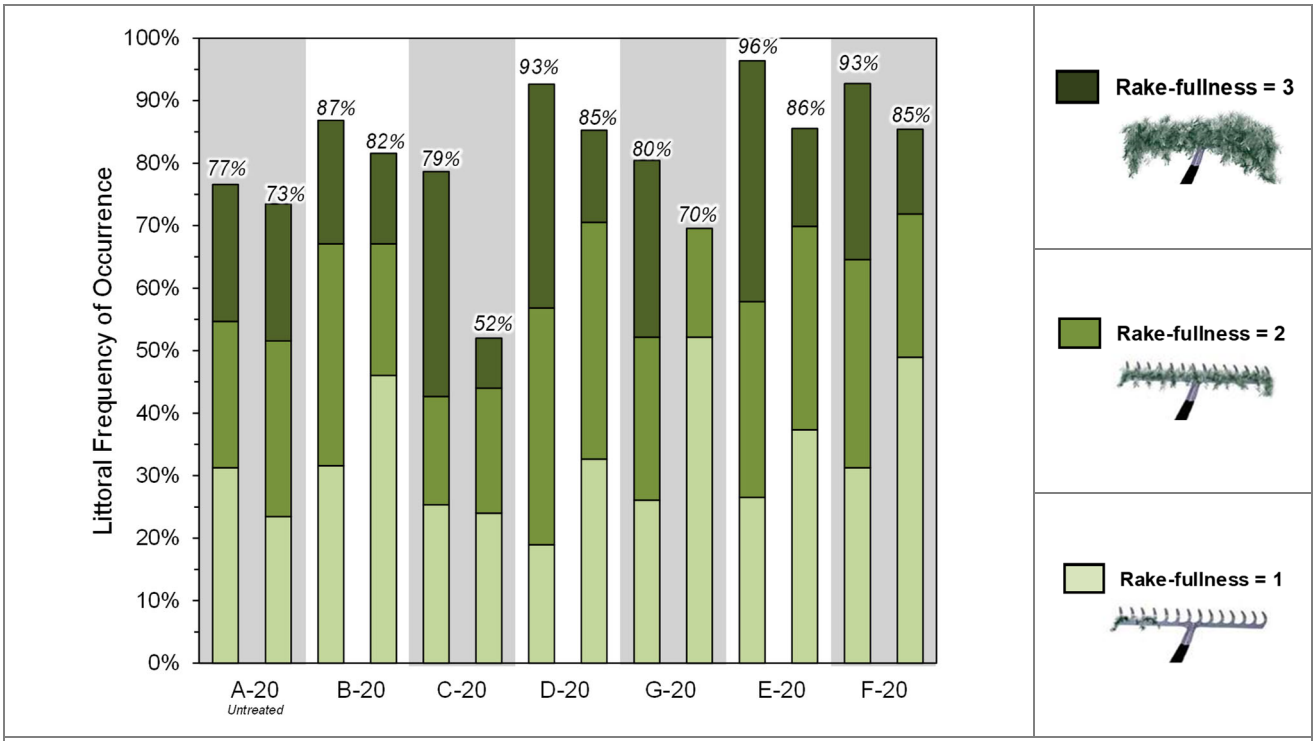


Figure 2.1-8. Aquatic plant frequency of occurrence and total rake fullness (TRF) ratings during pre- and post treatment sub-sample point-intercept survey surveys. N=535

2019 Herbicide Treatment Sites

Figure 2.1-9 and Figure 2.1-10 investigates the aquatic plant data at sites treated with ProcellaCOR™ in 2019 on Minocqua and Kawaguesaga Lakes, respectively. The sub-sample point-intercept sub-sample locations discussed in regards to the 2020 treatment sites all occurred within the application area, where the 2019 data were collected in the general vicinity of the treatment area, perhaps in the Area of Potential Impact (AOPI).

On both lakes, the EWM population was reduced greatly during the *year of treatment* (2019) and remained low during the *year after treatment* (2020) (Figure 2.1-9, Figure 2.1-10). Professional hand-harvesting also took place within these areas in 202, removing rebounding plants. These data suggest that the EWM population in this area was largely killed by the herbicide treatment, as opposed to simply injured and allowed to rebound.

These data also indicate that northern watermilfoil and water marigold were reduced to zero during the *year of treatment* and did not rebound during the *year after treatment*. Most other native plant populations remained relatively stable over this time period.

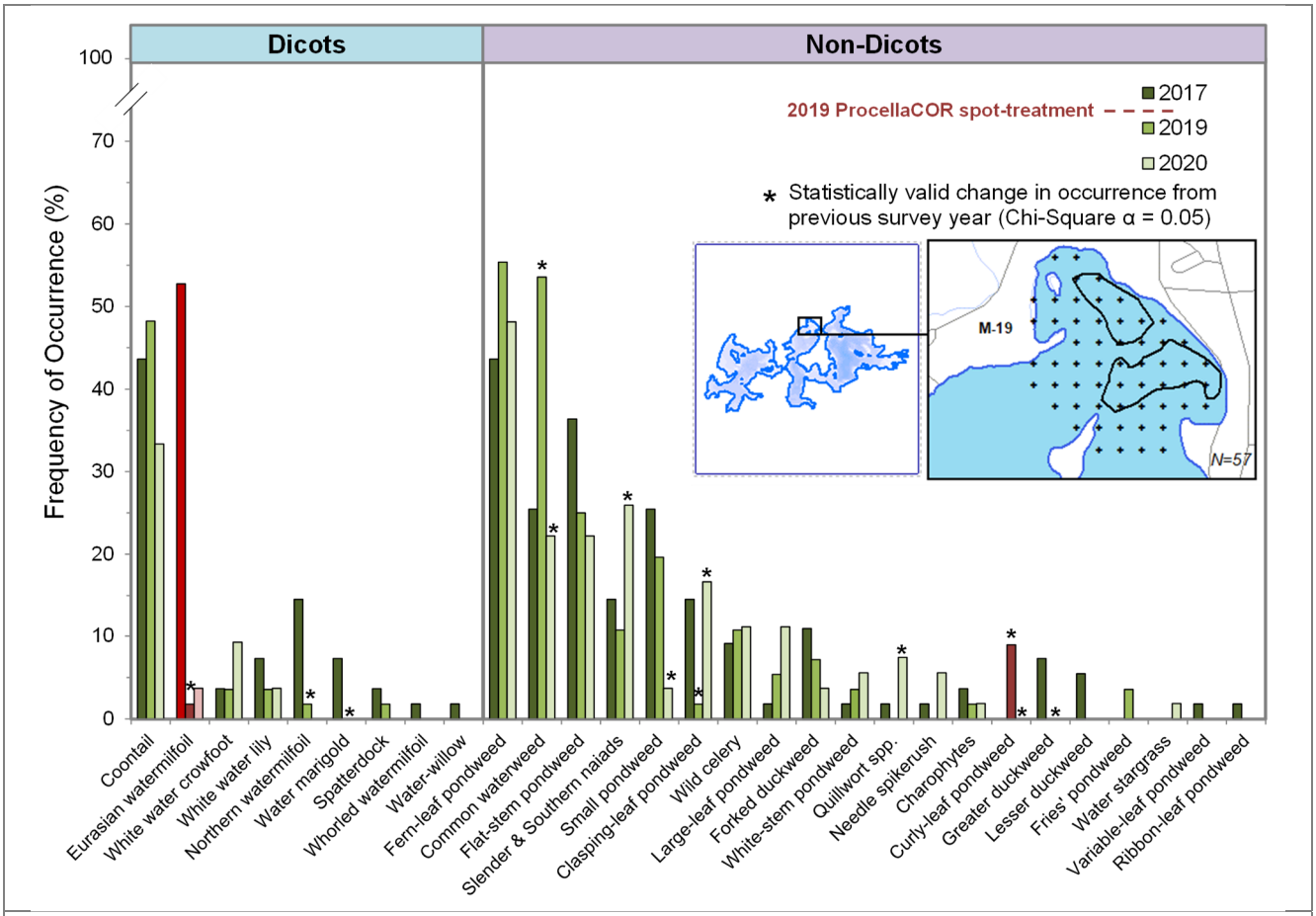


Figure 2.1-9. Frequency of occurrence of aquatic plants from 2019 treatment sites on Minocqua Lake. Statistical differences based upon Chi-square (α = 0.05). N=57

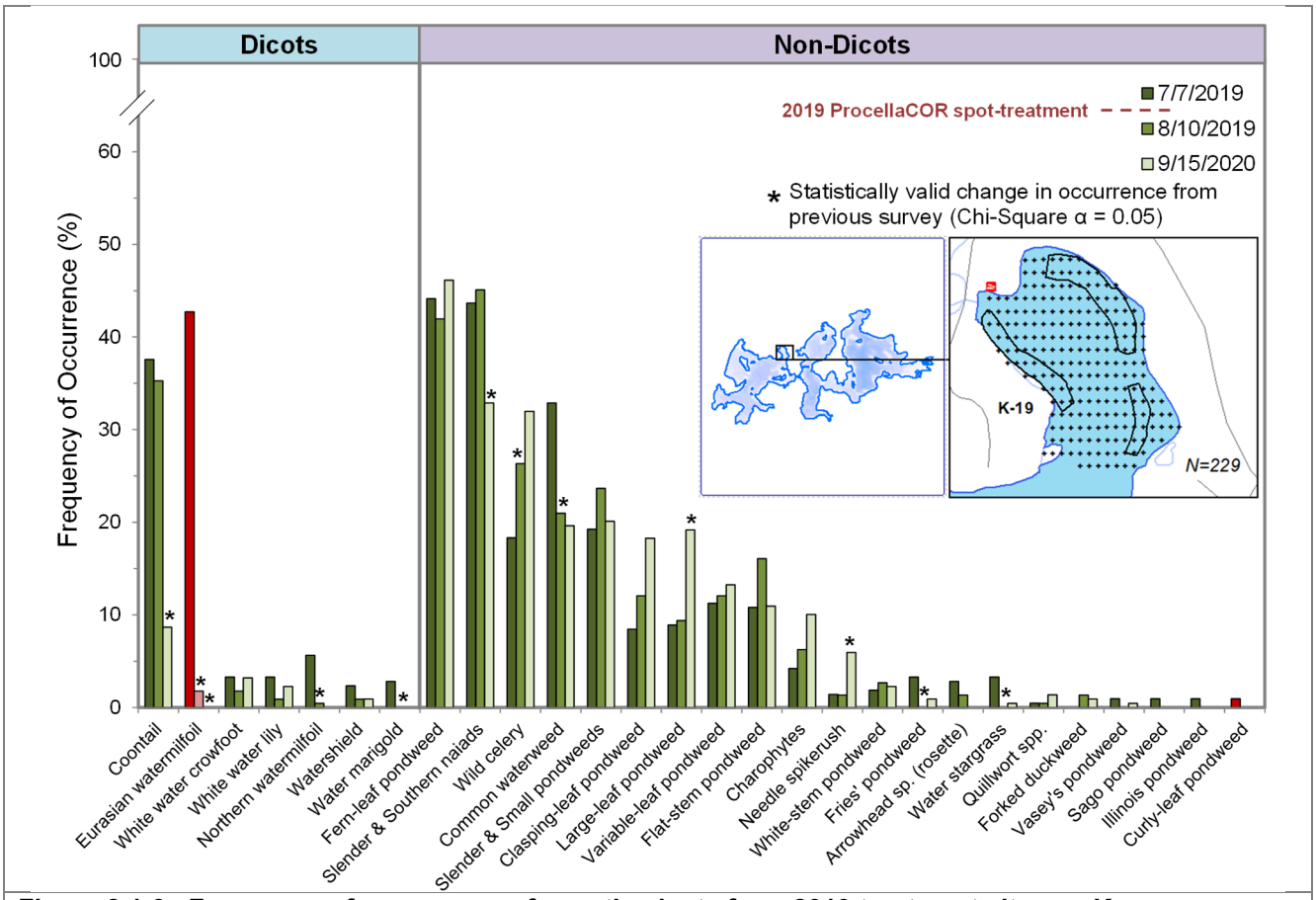


Figure 2.1-9. Frequency of occurrence of aquatic plants from 2019 treatment sites on Kawaguesaga Lake. Statistical differences based upon Chi-square (α = 0.05). N=229

2.2 Qualitative Monitoring: Late-Summer EWM Mapping Surveys

A qualitative assessment of the 2020 herbicide treatment includes comparing the 2019 Late-Season EWM Mapping Survey (*year before treatment*)) to the 2020 Late-Season EWM Mapping Survey (*year of treatment*) mapping results. As discussed above, these data can also be accessed through the MKLPA's interactive web map. The following figures will display the data from these two surveys side-by-side, allowing an understanding of the treatment impacts within and around application areas.

The 2020 Late-Season EWM Mapping Survey indicated large reductions in the EWM population throughout Minocqua and Kawaguesaga Lakes. The survey crew did not observe any EWM from the bow of the survey boat within any of the 2020 treated sites (Figure 2.2-1 – 2.2-6. It is also important to note that a great deal of hand-harvesting occurred in the system during 2020, which also contributed to the EWM population changes observed (Maps 4-11).

Two 2020 treatment sites were located in Kawaguesaga Lake (E-20, F-20) and both were treated in late-June. It is suspected that herbicide drift and mixing within the main basin of Kawaguesaga (~488 acres, divided north of Beer Can Island) may have resulted in un-expected basin-wide impacts to the EWM population well outside of where herbicide was directly applied (Figure 2.2-1). Back-calculations indicate that if florpyrauxifen-benzyl mixed evenly through the epilimnion of this basin from sites E-20 and F-20, the theoretical concentration would be 0.23 ppb. It is important to note that the Area of

Potential Impact (AOPI) used within this calculation is not a confined volume that completely limits dissipation, but provides useful context about what potential concentrations could have been observed. Similar basin-wide impacts have been observed on other 2020 projects at this concentration.

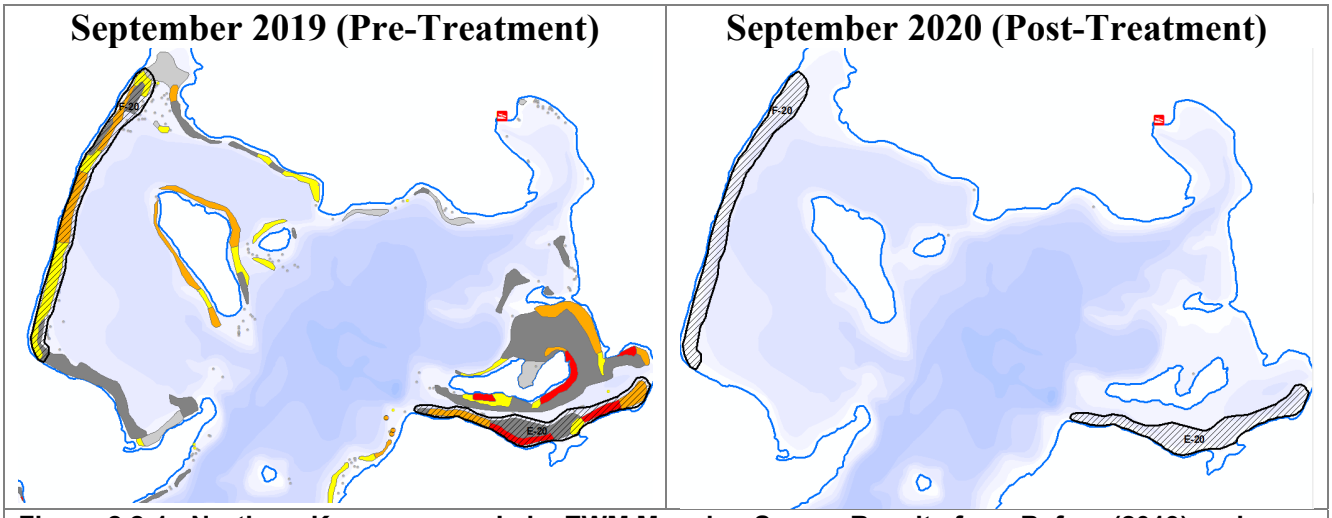


Figure 2.2-1. Northern Kawaguesaga Lake EWM Mapping Survey Results from Before (2019) and After (2020) ProcellaCOR™ herbicide treatment. For legend, reference Map 1.

Sites C-20 and D-20 were treated in early June. Back-calculations indicate the potential basin-wide florpyrauxifen-benzyl mixed evenly through the epilimnion of this basin (approx. extent of map shown) from sites C-20 and D-20, the theoretical lake-wide concentration would be 0.31 ppb (Figure 2.2-2). Treatment of G-20 occurred in late-June and alone could have resulted in 0.13 ppb basin-wide.

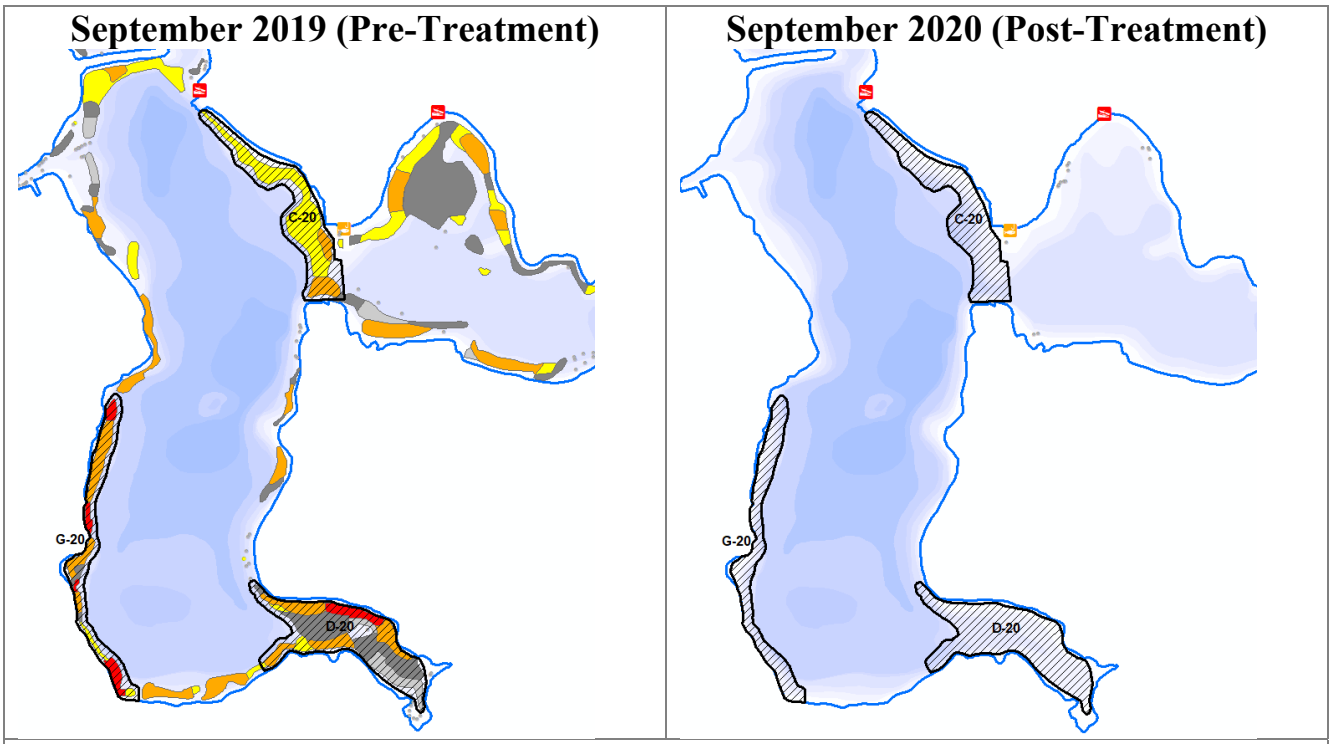


Figure 2.2-2. Western basin of Minocqua Lake EWM Mapping Survey Results from Before (2019) and After (2020) ProcellaCOR™ herbicide treatment. For legend, reference Map 1.

Site B-20 was in a much larger basin where basin-wide concentrations are less applicable. That being said, EWM reductions were found north within Huber Bay likely as a result of herbicide dissipation/drift (Figure 2.2-3).

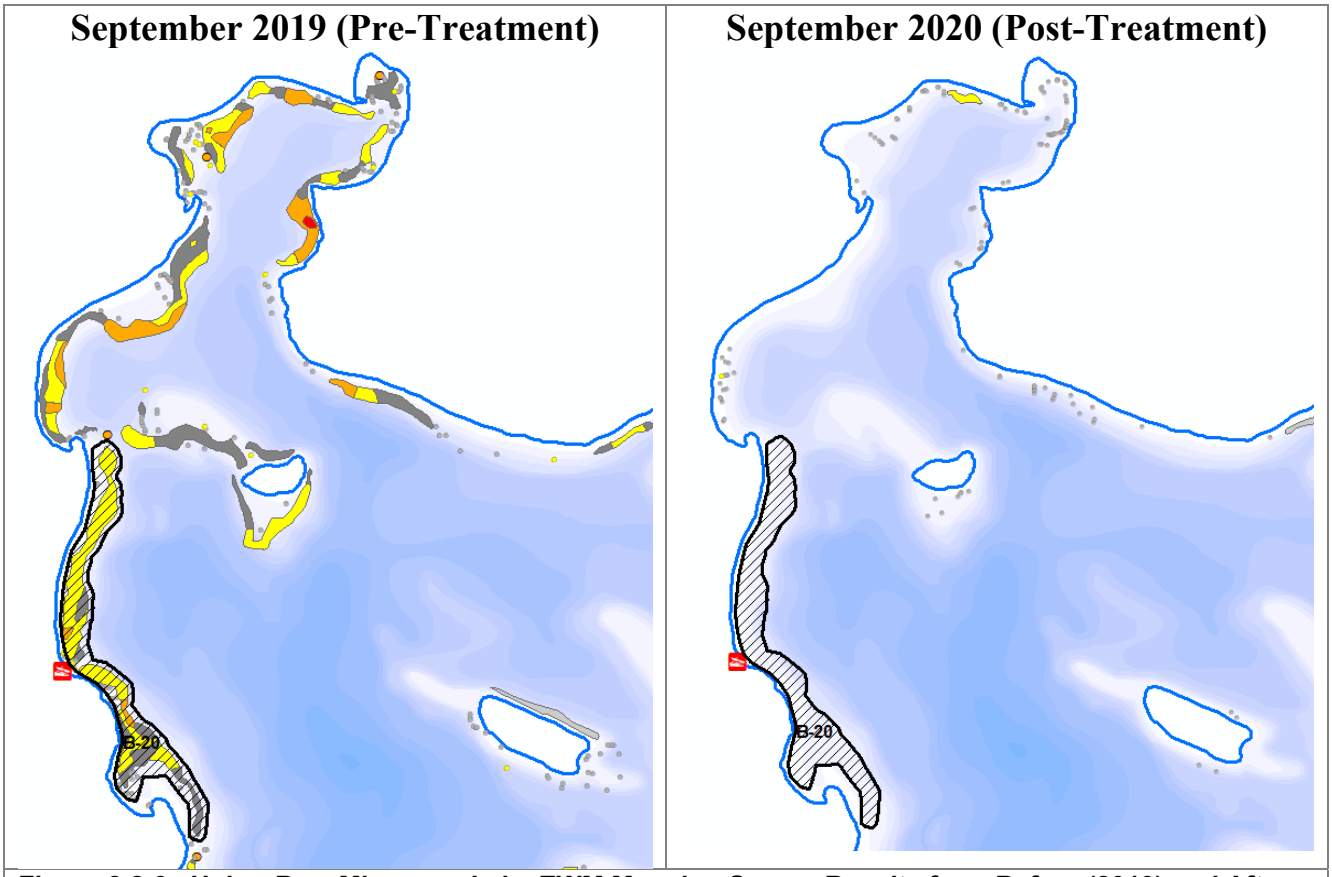


Figure 2.2-3. Huber Bay, Minocqua Lake EWM Mapping Survey Results from Before (2019) and After (2020) ProcellaCOR™ herbicide treatment. For legend, reference Map 1.

While some EWM declines may have been related to other factors including an overall poor growing year for EWM, large decreases were documented in and around EWM treatment areas. Figure 2.2-4 shows the EWM population change within Stacks Bay, upstream and a large distance from any treatment site. Along the north shore to the west of the boat landing, a high level of contracted hand-harvesting took place which could explain the declines observed. The EWM population along the southern shoreline continues to contain dense EWM during the late-summer of 2020.

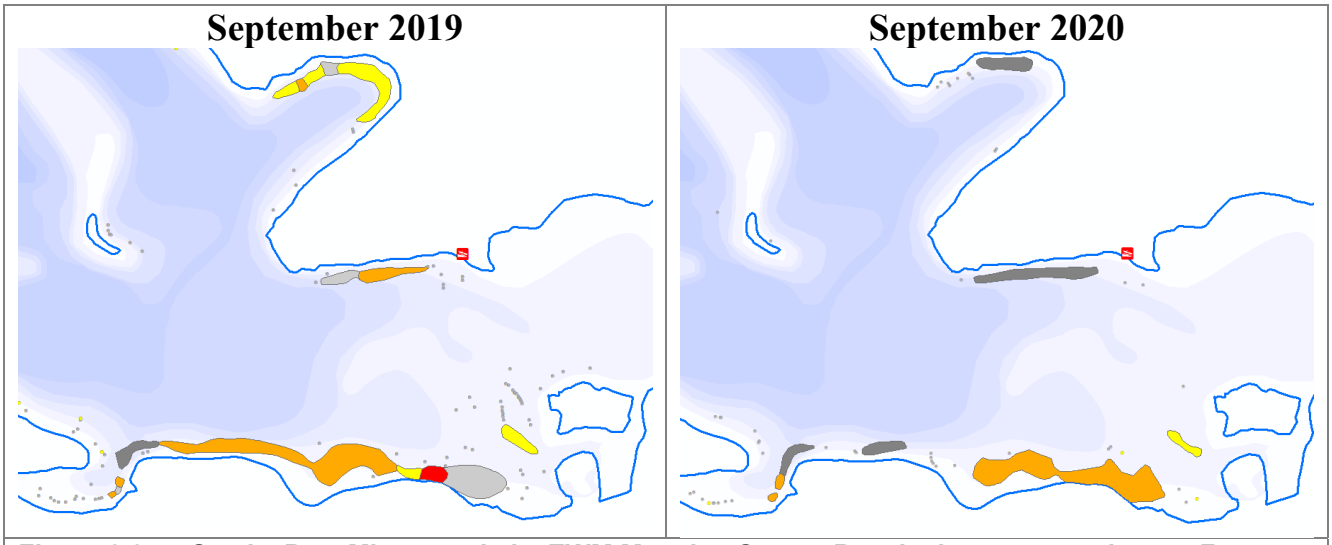


Figure 2.2-4. Stacks Bay, Minocqua Lake EWM Mapping Survey Results in non-treated area. For legend, reference Map 1.

The northern part of School House Bay was targeted as a part of the 2019 herbicide treatment program. EWM continues to be of low density in this basin during the *year after treatment* (Figure 2.2-5).

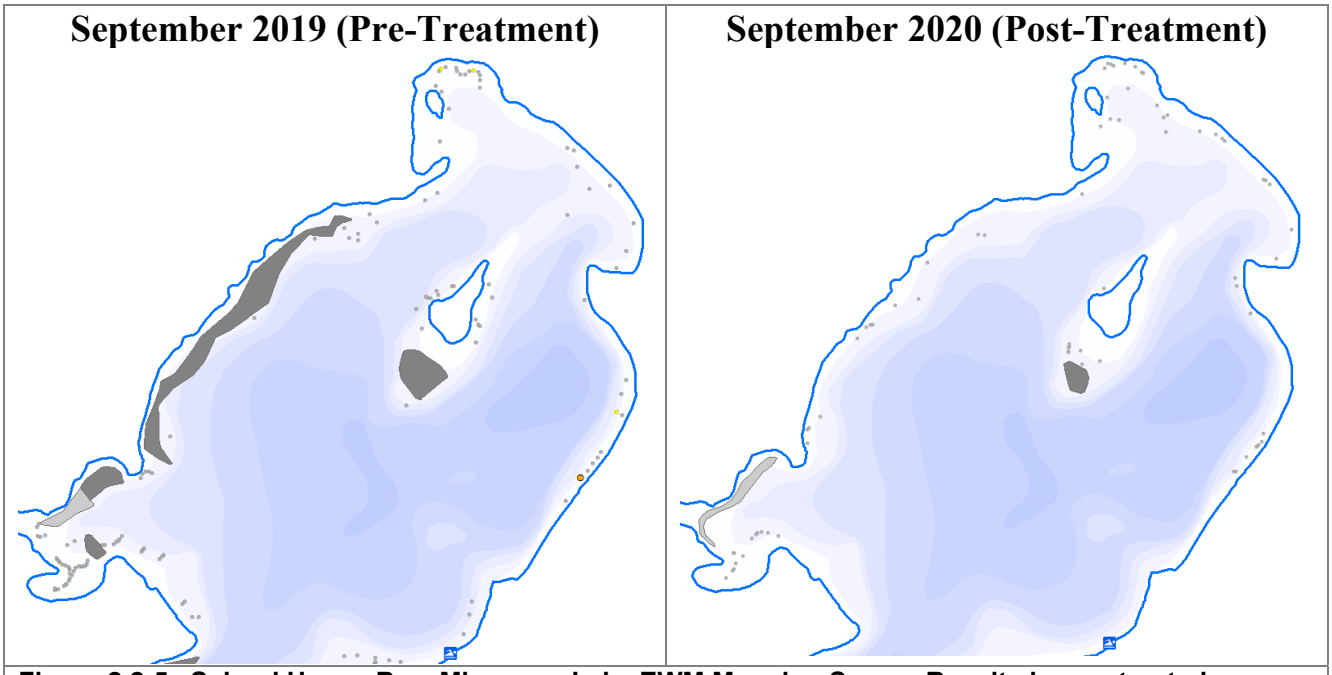


Figure 2.2-5. School House Bay, Minocqua Lake EWM Mapping Survey Results in non-treated area. For legend, reference Map 1.

The southern part of Kawaguesaga Lake, south of Beer Can Island contains a similar amount of EWM during the late-summer of 2020 as it did in 2019 (Figure 2.2-6). An exception would be along the northern shoreline where a significant hand-harvesting program occurred.

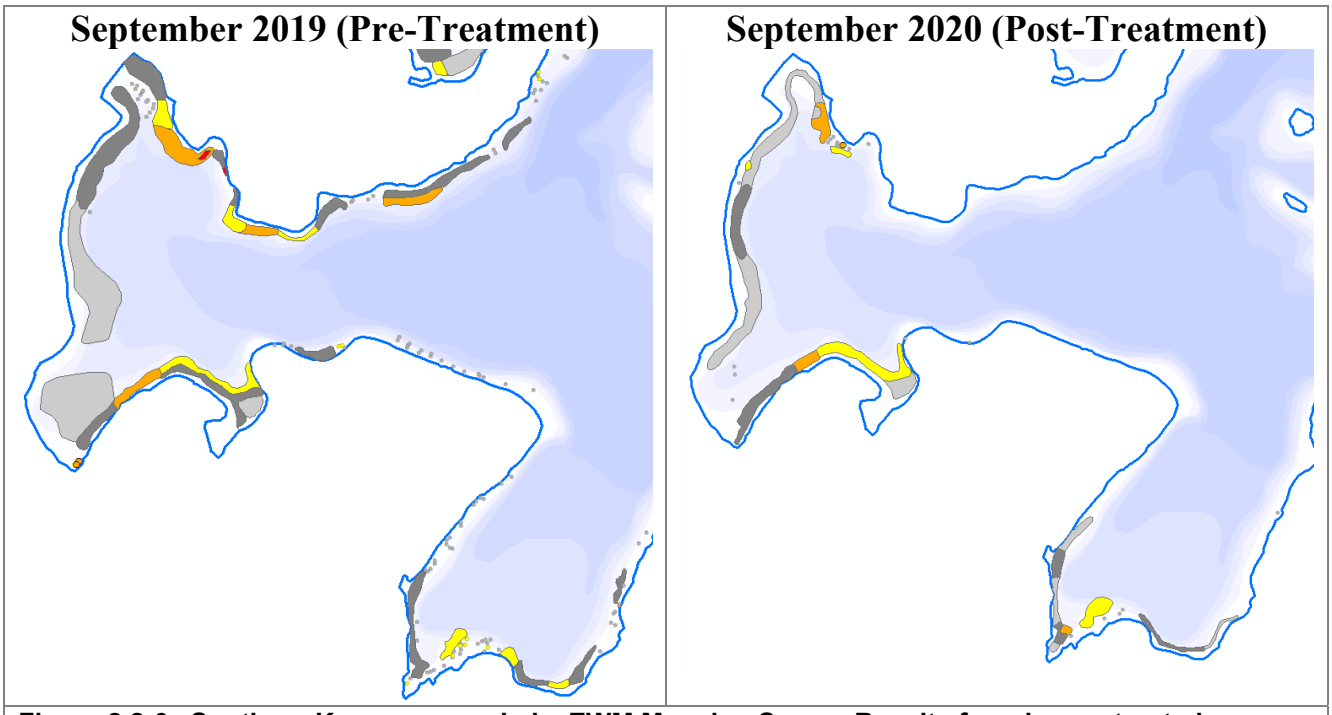


Figure 2.2-6. Southern Kawaguesaga Lake EWM Mapping Survey Results from in non-treated area. For legend, reference Map 1.

2.3 Herbicide Concentration Monitoring

The herbicide concentration monitoring plan associated with the treatment was developed by Onterra and the WDNR, with the intent of gaining sufficient data to aid in understanding the concentrations of florpyrauxifen-benzyl that were achieved in the treatment area in the hours and days after treatment. The WDNR accepted the 2020 Minocqua-Kawaguesaga ProcellaCOR™ treatment into a research project, allowing access to laboratory able to detect the florpyrauxifen-benzyl at lower levels than the herbicide manufacturer's facility – 1 part per billion (ppb). Samples were collected at replicate sites in each of two treatment areas in Minocqua Lake (June 15, 2020 treatment) and two treatment areas in Kawaguesaga Lake (June 30, 2020 treatment) at seven time intervals after treatment. Samples were collected by volunteer members of the MKLPA and upon completion of the sampling, were shipped to EPL Bio Analytical Services in Niantic, Illinois for analysis. A copy of the herbicide concentration monitoring plan is included as Appendix C.

Figure 2.3-1 and Figure 2.3-2 display the results of the post treatment herbicide concentration monitoring. The two different application rates are converted to parts per billion of florpyrauxifen-benzyl acid equivalent and are displayed as dashed lines on the graph. The data for Minocqua Lake show similar concentrations at 1-2 HAT (Hour After Treatment), regardless of the application rate. Concentrations remained higher in site D-20, which is more protected from water exchange than C-20. By the time of the last sample collection at 36 HAT, the herbicide concentrations at each monitoring location were below 1 ppb. But as discussed within the previous section, basin-wide EWM impacts have been observed when theoretical concentrations much lower than 1.0 ppb.

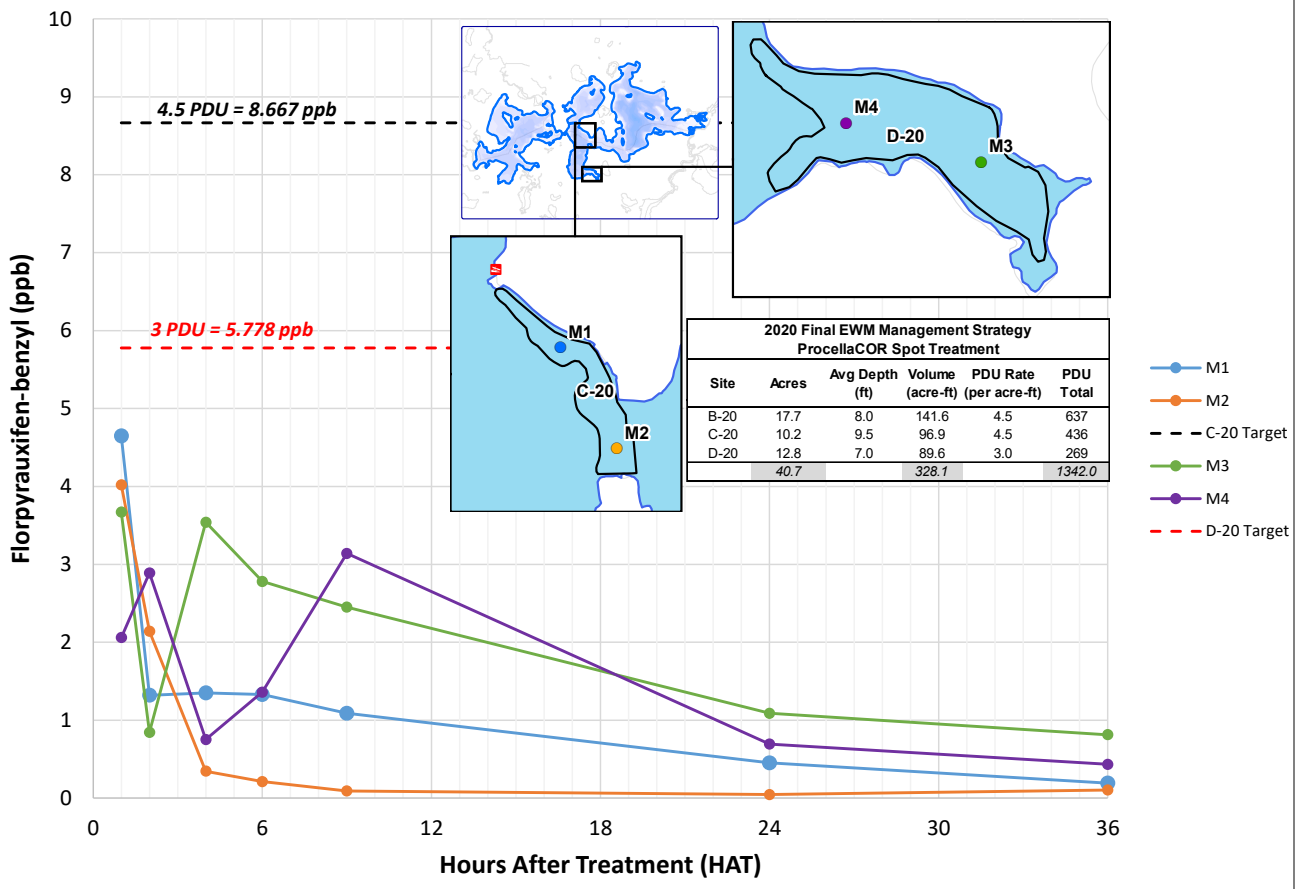


Figure 2.3-1. Herbicide concentration monitoring results following a 2020 florpyrauxifen-benzyl (ProcellaCOR™) treatment in Minocqua Lake. .

The data for Kawaguesaga Lake show higher concentrations at 1-2 HAT in E-20 compared to F-20. By 9 HAT, the herbicide concentrations at each monitoring location were below 1 ppb. Concentrations at the final sampling interval (36 HAT) averaged 0.18 ppb at all sites.

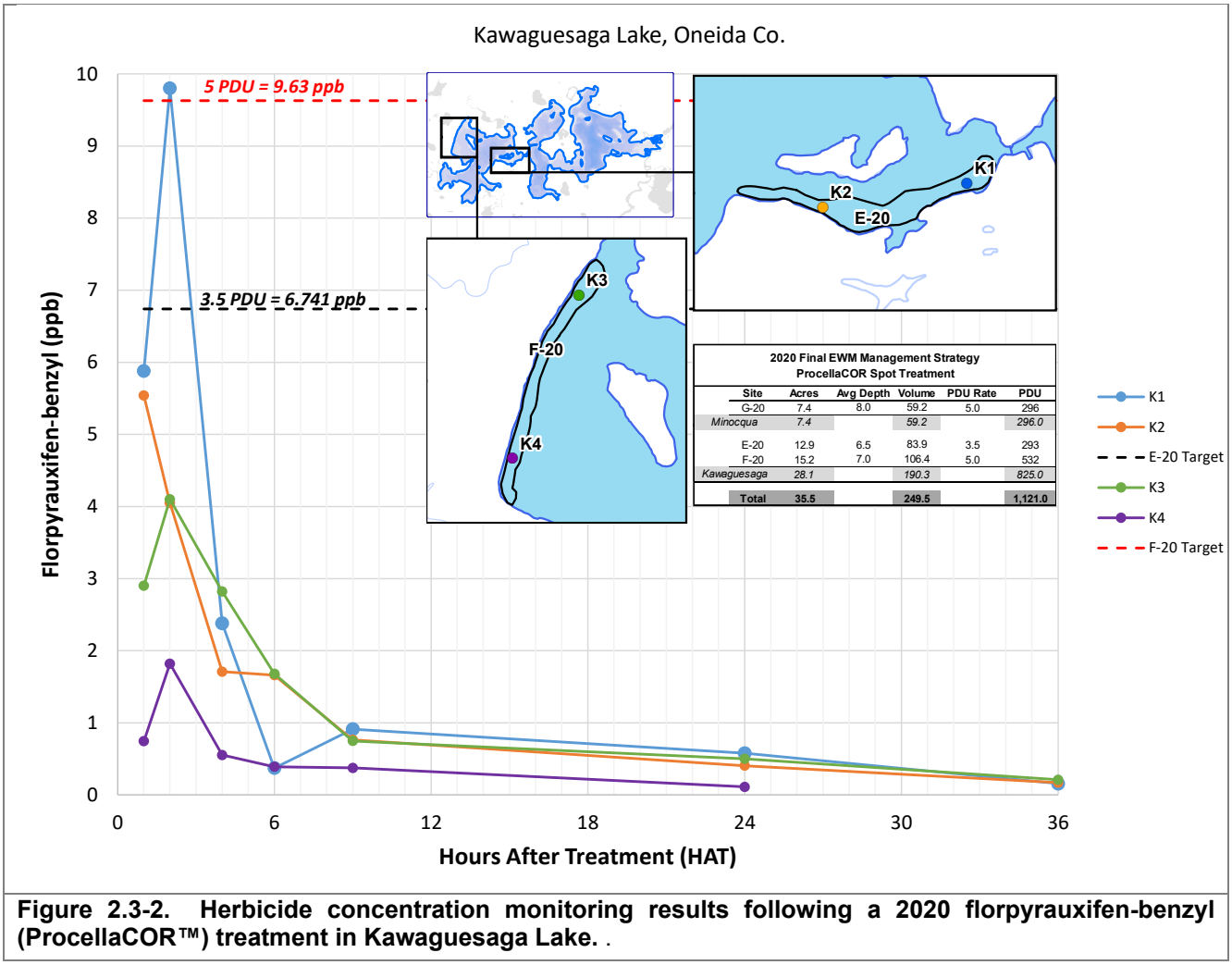


Figure 2.3-2. Herbicide concentration monitoring results following a 2020 florpyrauxifen-benzyl (ProcellaCOR™) treatment in Kawaguesaga Lake. .

2.4 Invasive Watermilfoil Genetic Testing

Photo 2.4-1 shows a cross-section of a whorl of four EWM leaves. One of the primary ways to distinguish between different species of watermilfoils is to count the number of leaflets on each leaf. As shown on Figure 2.4-1, northern watermilfoil (green triangles) typically have leaflet counts under 23 whereas EWM (purple diamonds) typically has leaflet counts over 25. Hybrid watermilfoil (HWM) leaflet counts overlap with both these ranges (red circles), making field identification difficult. While leaflet counts can be a relatively definitive way to differentiate between EWM and northern watermilfoil, this method is less definitive in distinguishing HWM from EWM and northern watermilfoil. DNA testing is required to determine if a system has EWM vs HWM, often times having both.

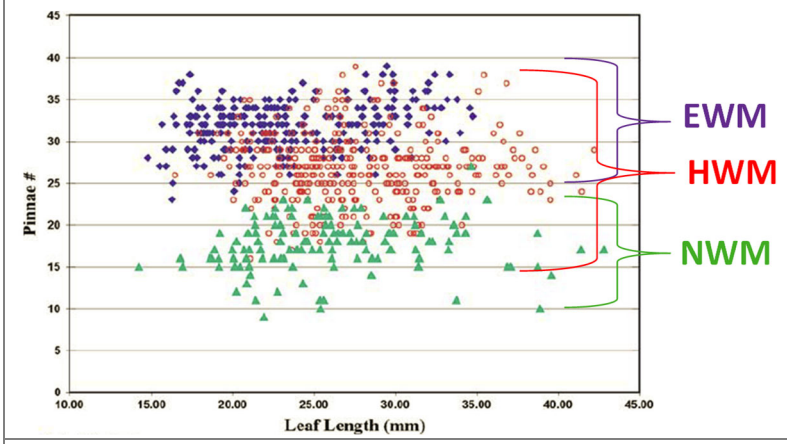


Figure 2.4-1. Pinnae (leaflet) counts from three watermilfoil species. Extracted and modified from Moody & Les, 2007. Leaf length spreads out the data but is not important here.

Photo 2.4-1: EWM leaflet.

In 2014, the WDNR sent in invasive watermilfoil samples from the Minocqua Kawaguesaga system to Grand Valley State University (Dr. Ryan Thum) for genetic testing using a Rapid Assay Method (ITS). This test indicates whether the sample is northern watermilfoil, EWM, or HWM. One sample from Minocqua was confirmed as HWM and one sample from Kawaguesaga was confirmed as EWM. This suggests that there is potentially a mix of EWM and HWM throughout the system considering the high traffic in/out of the lakes.

In general, it is known that some strains of HWM grow faster, are more invasive, and are less responsive to some herbicides than pure-strain EWM. Field research also suggests that some strains of EWM are more robust and tolerant of herbicides than other strains. On many lakes, previous herbicide management may have killed off the weaker watermilfoil strains, leaving behind the more robust strains to repopulate. As a result, the population can become more invasive and less responsive to a specific herbicide. It is possible that this has taken place on this system considering only one herbicide, 2,4-D, as been used prior to ProcellaCOR™.

Invasive watermilfoil genetic testing has advanced in recent years, such that it is currently possible to understand what different strains of EWM/HWM exist in a given lake. Now at Montana State University, Dr. Thum and Onterra developed a research project that would be applicable to Minocqua and Kawaguesaga.

During the June pretreatment point-intercept sub-sample survey (G-29, E-20, F-20), Onterra collected invasive watermilfoil plant material (meristems) at 142 of the 225 sub-sample point-intercept locations (63%). The processed and dried samples were sent to Montana State University for genetic fingerprinting. The samples are processed in batches of 48. Dr. Ryan Thum randomly sampled 14 plants from each treatment site, totaling 42 plants which allowed for negative controls and duplicates needed for quality control measures.

The results of the first round of sampling came back as all being the exact same genotype (clone). Dr. Ryan Thum conveyed - *that genotype is the 'widespread' EWM genotype that we find commonly throughout Minnesota, Wisconsin, and Michigan*. If there are any different strains of EWM or HWM in these sites, they are certainly not the dominant strain. The remaining samples were not processed.

The original plan was to test any surviving invasive watermilfoil within these sites form the late-summer survey. If it is all one strain that survives, perhaps that is a tolerant strain to ProcellaCOR™. Because no EWM was found within these sites post treatment, no additional genetic studies took place. Discussions regarding replicating this research on 2021 herbicide treatment sites is being considered.

3.0 CONCLUSIONS & DISCUSSION

The coordination and implementation of the 2020 EWM management strategy was completed as planned for the Minocqua-Kawaguesaga Lakes System with collaboration from several project partners including the MKLPA, WDNR, APM, Schmidt's Aquatic, SePRO, and Onterra. Volunteer efforts provided by the MKLPA were instrumental in the completion of the post treatment herbicide concentration monitoring associated with the treatment.

The 2020 herbicide treatment showed promising results during the *year of treatment* with reductions in EWM demonstrated through comparative mapping surveys and point-intercept sub-sampling surveys. The overall impacts to the native plant populations appear to be confined primarily to northern watermilfoil and other sensitive broad-leaved (dicot species). A replication of the mapping survey and sub-sample point-intercept survey is proposed for 2021 and will allow for an understanding of the longer-term efficacy of the treatment as well as an assessment of the native plant communities population dynamics and recovery one year after treatment.

Weak-acid herbicides, like those used in the past on the Minocqua Chain (i.e. 2,4-D), are known to quickly dissipate from the application area. When these herbicides dissipate out of the treatment site, the concentrations and exposure times in these adjacent areas are typically insufficient to cause any meaningful impacts. Because ProcellaCOR™ can produce plant impacts at such low concentrations, the effects of herbicide dissipation and drift may be more meaningful with this chemistry. ProcellaCOR™ has a high binding affinity with organic materials and therefore was not thought to move off site as much as other herbicides.

The impacts of dispersion of ProcellaCOR™ in lakes after treatment is a topic for further study. In nearly every one of the ProcellaCOR™ treatments that Onterra monitored in 2020, EWM reductions were observed beyond the targeted area. Lake managers are current exploring theoretical herbicide concentrations if diluted out from an application area into the mixing zone of the whole-lake or lake-basin. Future research will likely couple these theoretical concentrations with measured concentrations outside of the application areas. Preliminary investigation yields that the concentrations observed in some of the Minocqua and Kawaguesaga were likely high enough for basin wide impacts.

3.1 2021 EWM Monitoring & Management Strategy Development

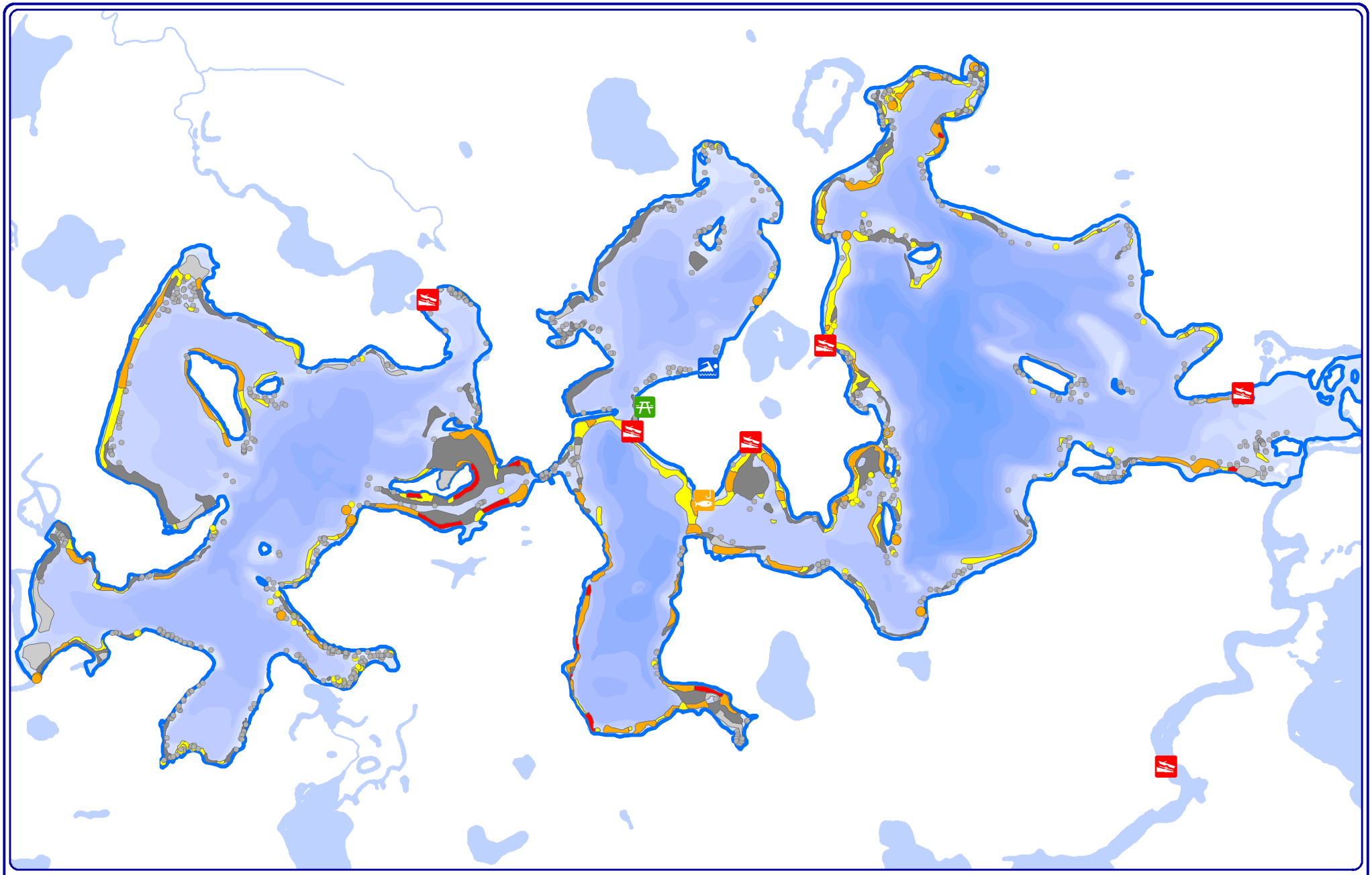
The MKLPA intends to maintain an aggressive approach to EWM management over the upcoming years following an adaptive management framework. The 2019 herbicide program targeted areas with high conformance with the best characteristics for positive treatment outcomes, that is they targeted EWM populations in contained bays with minimal dissipation potential. After positive strides made as part of this effort, the 2020 herbicide treatment program targeted additional sites, some of which contain parameters difficult to achieve multi-year control, such as narrow EWM bands in exposed locations. The mechanism of success of the 2020 treatments is confounded by the potential whole-basin concentrations that could have been achieved. Said another way, these treatments had herbicide

concentrations and exposure times consistent with both spot treatments (high upfront concentration) and whole-basin (long exposure to low concentration) use patterns.

The preliminary 2021 herbicide strategy targets EWM populations at the two ends of the system, upstream Stacks Bay and the southwestern bays of Kawaguesaga Lake (Map 12). These areas contain the highest density EWM populations in the system. A preliminary plan outlined just over 31 acres for directed herbicide application. The MKLPA, WDNR (lakes and fisheries programs), and Onterra discussed the 2021 strategy over the course of several teleconferences and follow-up email correspondences. Upon further review of potential basin-wide herbicide concentrations, the strategy was reduced to target only 17.2 acres of the densest EWM with the expectation that impacts basin-wide EWM impacts are likely. The WDNR approved the herbicide application permit on March 4, 2021.

The MKPA will direct follow-up hand-harvesting in all 2019 and 2020 herbicide treatment areas as part of their Integrated Pest Management strategy aimed to preserved the gains made over the past two years. Hand-harvesting will also be directed to previously dense areas that saw EWM reduction in 2020 potentially as a result of herbicide dissipation. The MKLPA has recently been awarded WDNR AIS Established Population Control (EPC) Grants to assist with funding cost share for most of the 2021 management and monitoring activities.

The WDNR generally supports conducing a whole-lake point-intercept survey at least once every five years to meet WDNR planning requirements unless whole-lake scale aquatic plant management is taking place and more frequent monitoring is requested for the specifically targeted areas. A whole-lake point-intercept survey is also required to have occurred in the past five years to be eligible to apply for WDNR AIS Control Grants. Whole-lake point-intercept surveys were last conducted on the system in 2017. The MKLPA will give consideration to conducting whole-lake point-intercept surveys in 2022.



N
W E
S

2,200
Feet

Onterra, LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR,1972 -digitized by Onterra
Orthophoto: NAIP, 2018
Aquatic Plants: Onterra, 2019
Map Date: October 10, 2019 - EJH

Project Location in Wisconsin

Legend

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony

Map 1

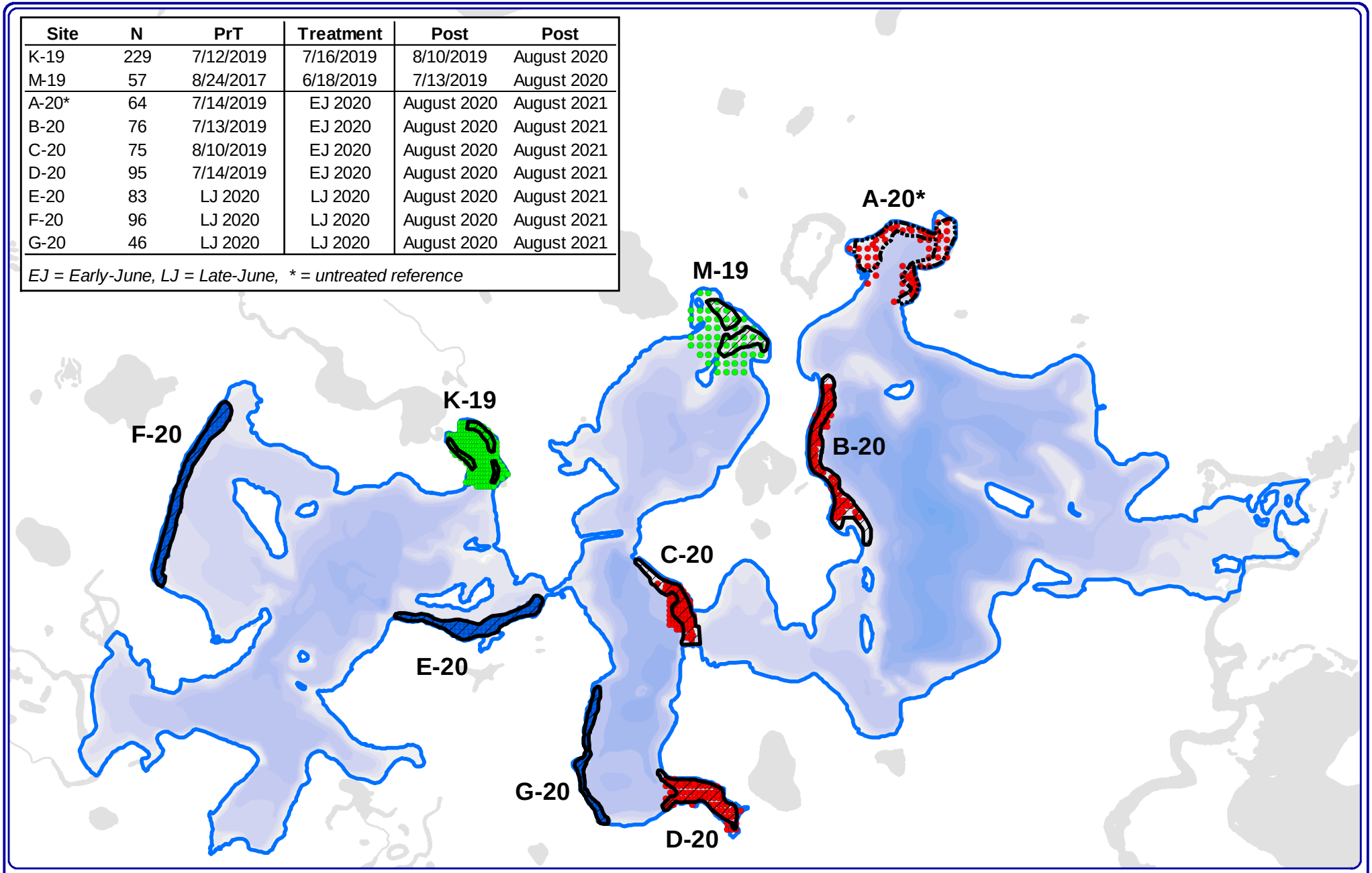
Minocqua & Kawaguesaga

Oneida, Wisconsin

September 2019
EWM Survey Results

Site	N	PrT	Treatment	Post	Post
K-19	229	7/12/2019	7/16/2019	8/10/2019	August 2020
M-19	57	8/24/2017	6/18/2019	7/13/2019	August 2020
A-20*	64	7/14/2019	EJ 2020	August 2020	August 2021
B-20	76	7/13/2019	EJ 2020	August 2020	August 2021
C-20	75	8/10/2019	EJ 2020	August 2020	August 2021
D-20	95	7/14/2019	EJ 2020	August 2020	August 2021
E-20	83	LJ 2020	LJ 2020	August 2020	August 2021
F-20	96	LJ 2020	LJ 2020	August 2020	August 2021
G-20	46	LJ 2020	LJ 2020	August 2020	August 2021

*EJ = Early-June, LJ = Late-June, * = untreated reference*



N
W E
S

2,300
Feet

Onterra LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: Onterra, 2015
Aquatic Plants: Onterra, 2019
Map Date: June 4, 2020 - EJH

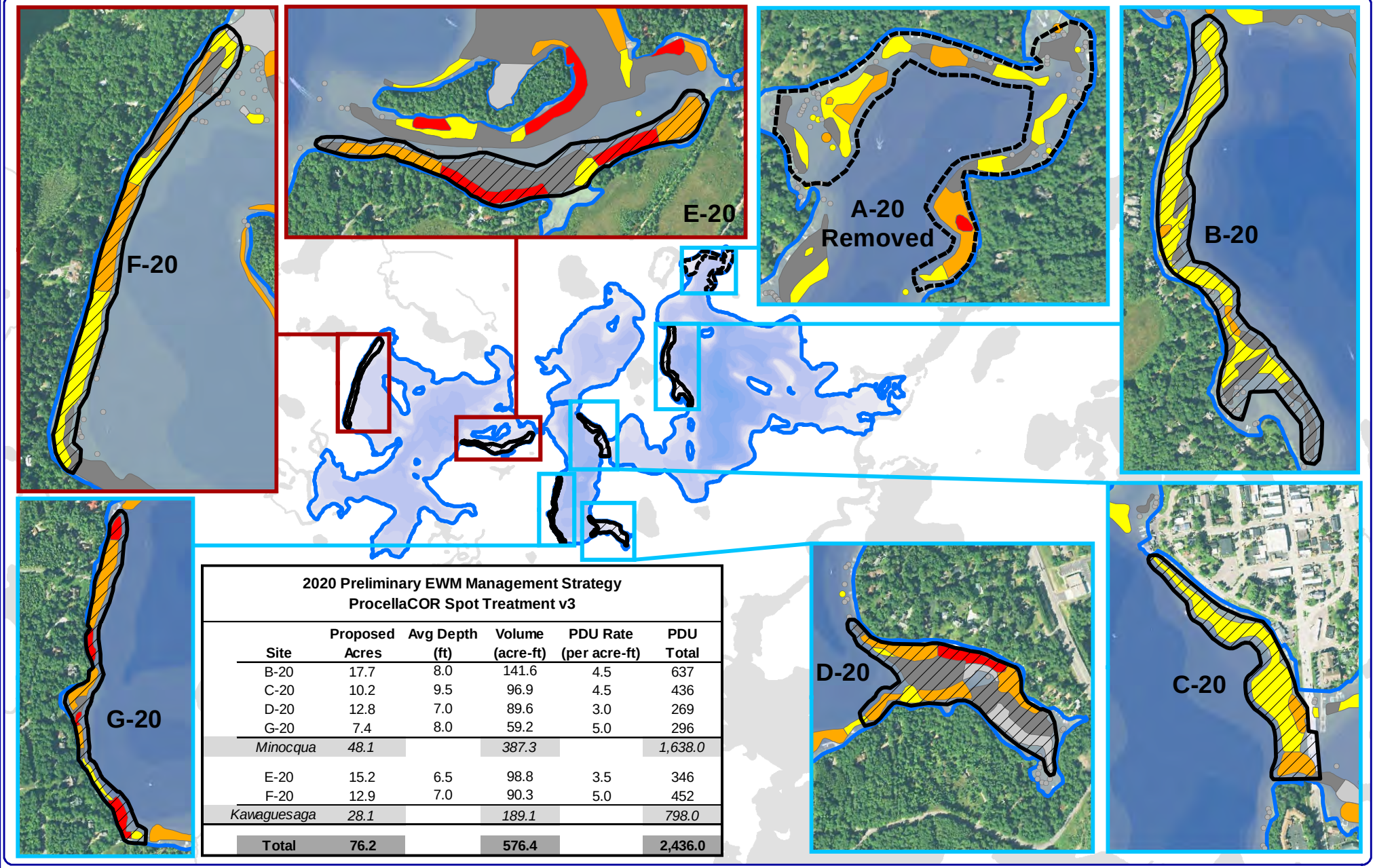
Project Location in Wisconsin

Legend

- Herbicide Application Site
- Sub-PI for 2019 Treatment
- Sub-PI for 2020 Treatment, PrT Summer '19
- Sub-PI for 2020 Treatment, PrT Mid-June '20

Map 2
Minocqua-Kawaguesaga Lakes
Oneida County, Wisconsin

PI Sub-Sample Monitoring Plan



2020 Preliminary EWM Management Strategy
ProcellaCOR Spot Treatment v3

Site	Proposed Acres	Avg Depth (ft)	Volume (acre-ft)	PDU Rate (per acre-ft)	PDU Total
B-20	17.7	8.0	141.6	4.5	637
C-20	10.2	9.5	96.9	4.5	436
D-20	12.8	7.0	89.6	3.0	269
G-20	7.4	8.0	59.2	5.0	296
Minocqua	*48.1*		*387.3*		*1,638.0*
E-20	15.2	6.5	98.8	3.5	346
F-20	12.9	7.0	90.3	5.0	452
Kawaguesaga	*28.1*		*189.1*		*798.0*
Total	**76.2**		**576.4**		**2,436.0**

N W E S

5,100
Feet

Onterra LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR,1972 -digitized by Onterra
Orthophoto: NAIP, 2017
Aquatic Plants: Onterra, 2019
Map Date: April 7, 2020 - EJH

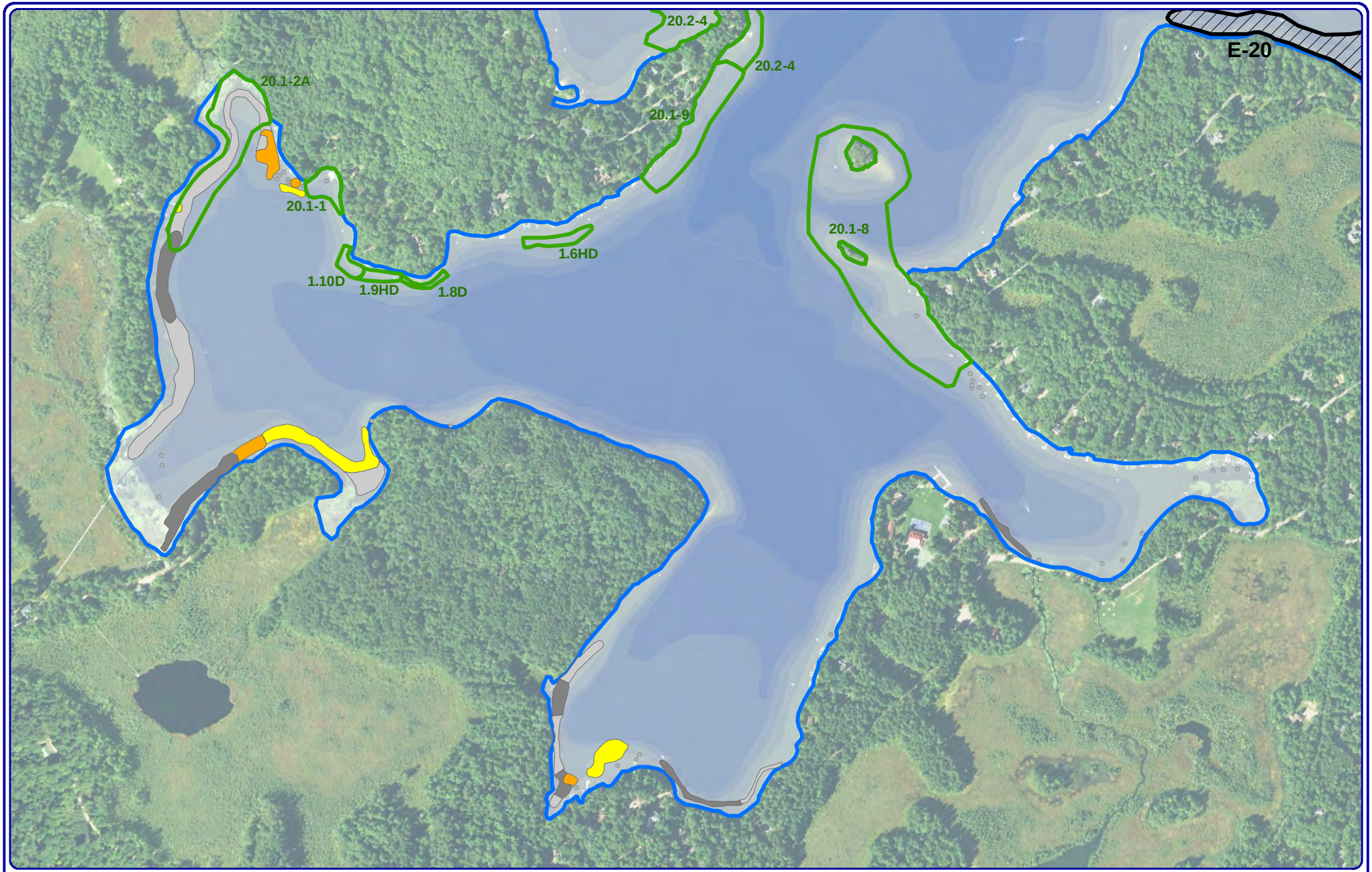

Project Location in Wisconsin

Legend

Eurasian Watermilfoil (September 23-25, 2019)

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony
- Preliminary Herbicide Application Area

Map 3
Minocqua & Kawaguesaga
Oneida, Wisconsin
Final 2020 EWM Treatment Areas

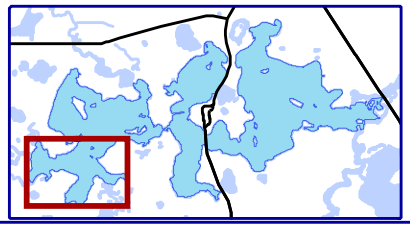


N
W E
S

725
Feet

Onterra, LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR,1972
- digitized by Onterra
Orthophoto: NAIP, 2018
Aquatic Plants: Onterra, 2020
Map Date: October 5, 2020 - EJH



Legend

EWM Survey Results (September 14-17, 2020)

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony

2020 Hand-Harvest or DASH Location

2019-2020 Herbicide Applicaiton Area

Map 4 (1 of 8 EWM Maps)

Minocqua & Kawaguesaga

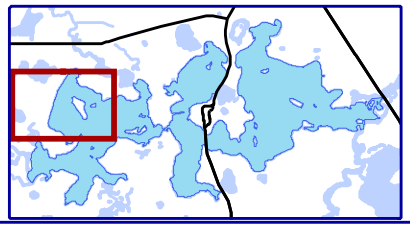
Oneida, Wisconsin

Late-Season 2020 EWM Survey Results

725
Feet

Onterra, LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR,1972
- digitized by Onterra
Orthophoto: NAIP, 2018
Aquatic Plants: Onterra, 2020
Map Date: October 5, 2020 - EJH



Legend

EWM Survey Results (September 14-17, 2020)

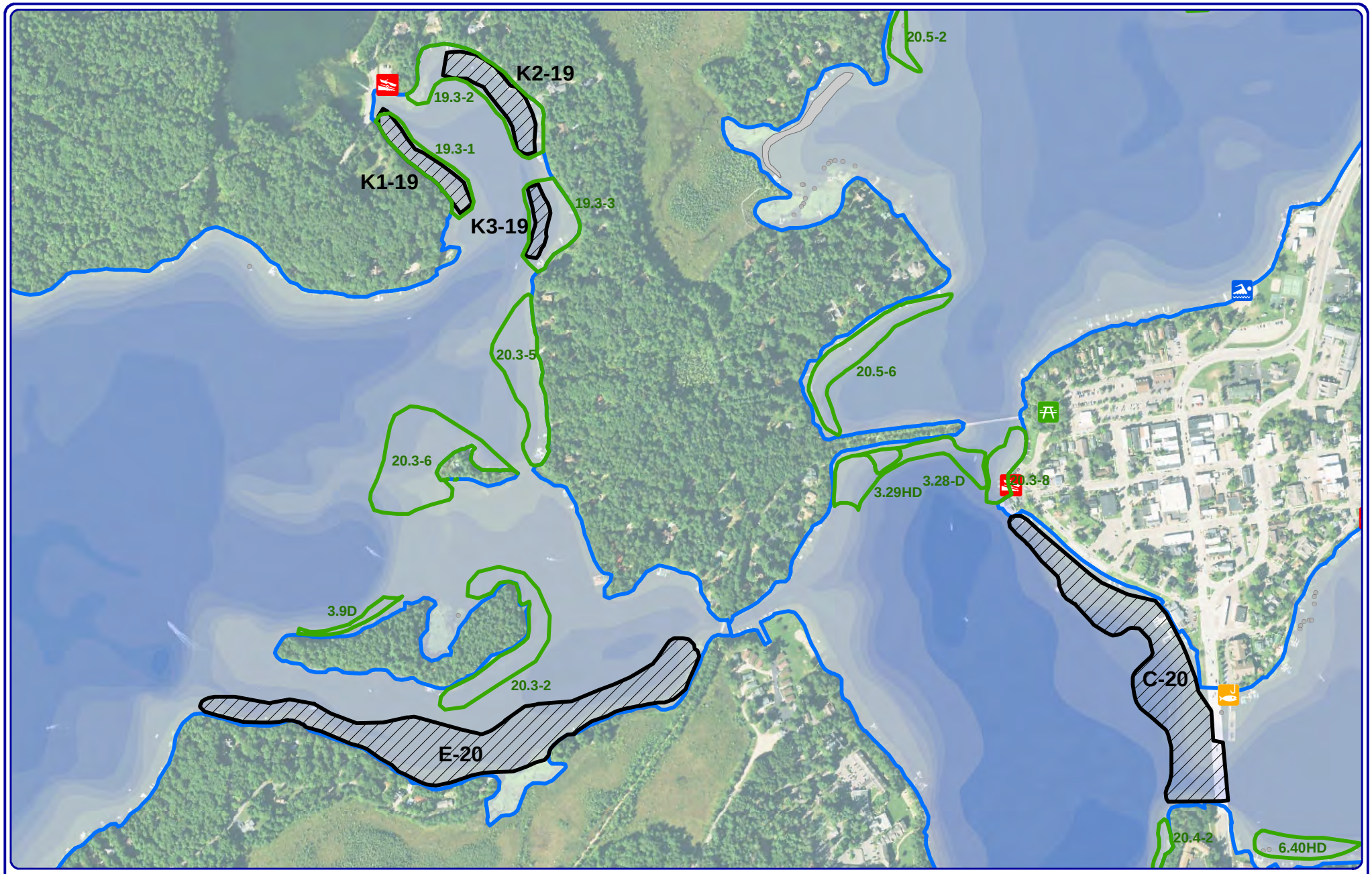
- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony
- 2020 Hand-Harvest or DASH Location
- 2019-2020 Herbicide Applicaiton Area

Map 5 (2 of 8 EWM Maps)

Minocqua & Kawaguesaga

Oneida, Wisconsin

Late-Season 2020 EWM Survey Results

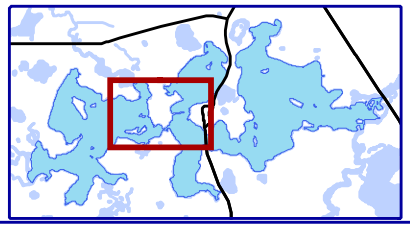


N
W E
S

725
Feet

Onterra LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR,1972
- digitized by Onterra
Orthophoto: NAIP, 2018
Aquatic Plants: Onterra, 2020
Map Date: October 5, 2020 - EJH



Legend

EWM Survey Results (September 14-17, 2020)

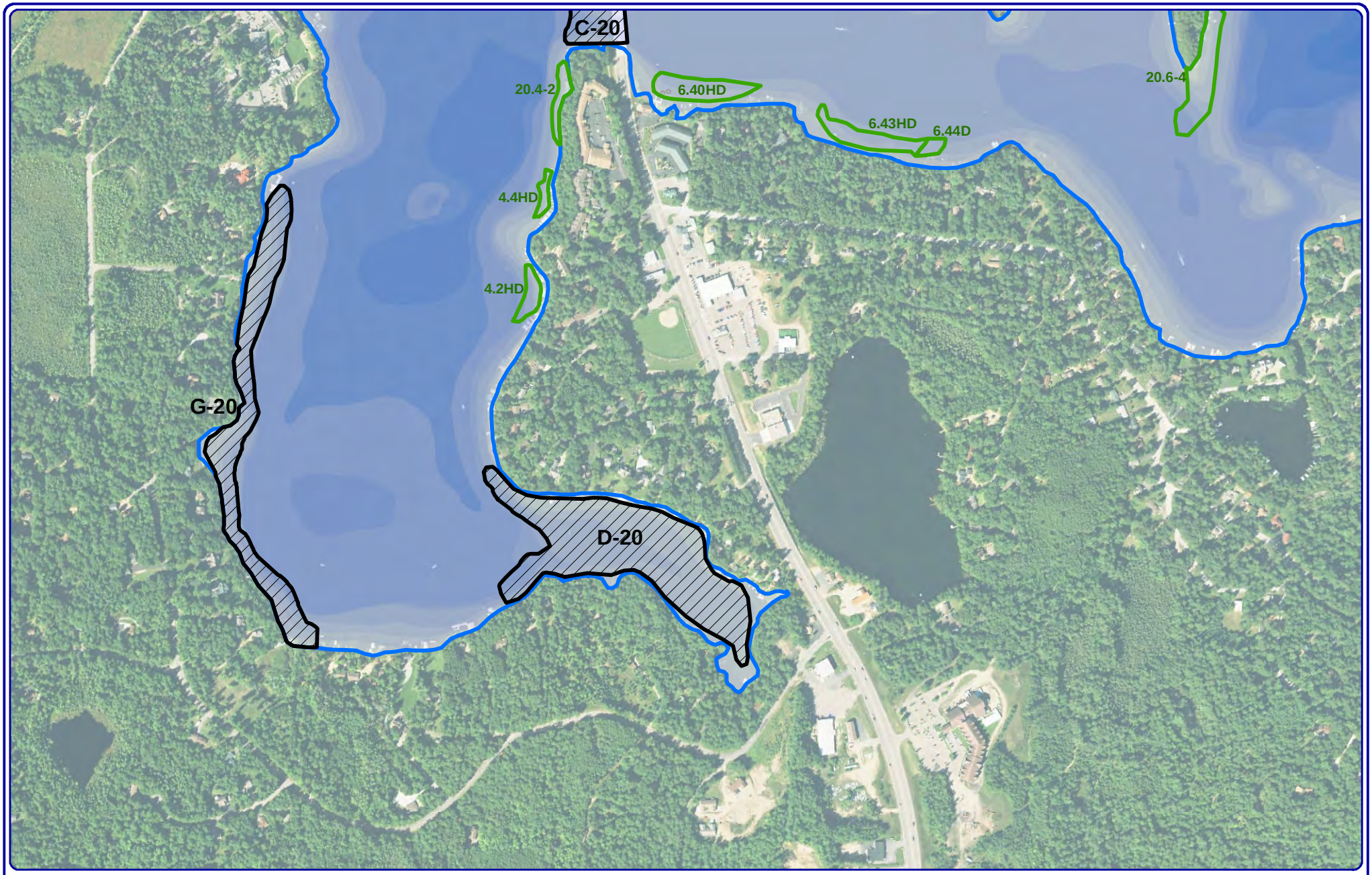
- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony
- 2020 Hand-Harvest or DASH Location
- 2019-2020 Herbicide Applicaiton Area

Map 6 (3 of 8 EWM Maps)

Minocqua & Kawaguesaga

Oneida, Wisconsin

Late-Season 2020 EWM Survey Results

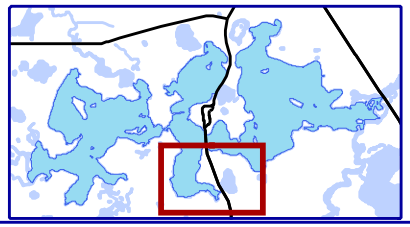


N
W E
S

725
Feet

Onterra, LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR,1972
- digitized by Onterra
Orthophoto: NAIP, 2018
Aquatic Plants: Onterra, 2020
Map Date: October 5, 2020 - EJH



Legend

EWM Survey Results (September 14-17, 2020)

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony

2020 Hand-Harvest or DASH Location

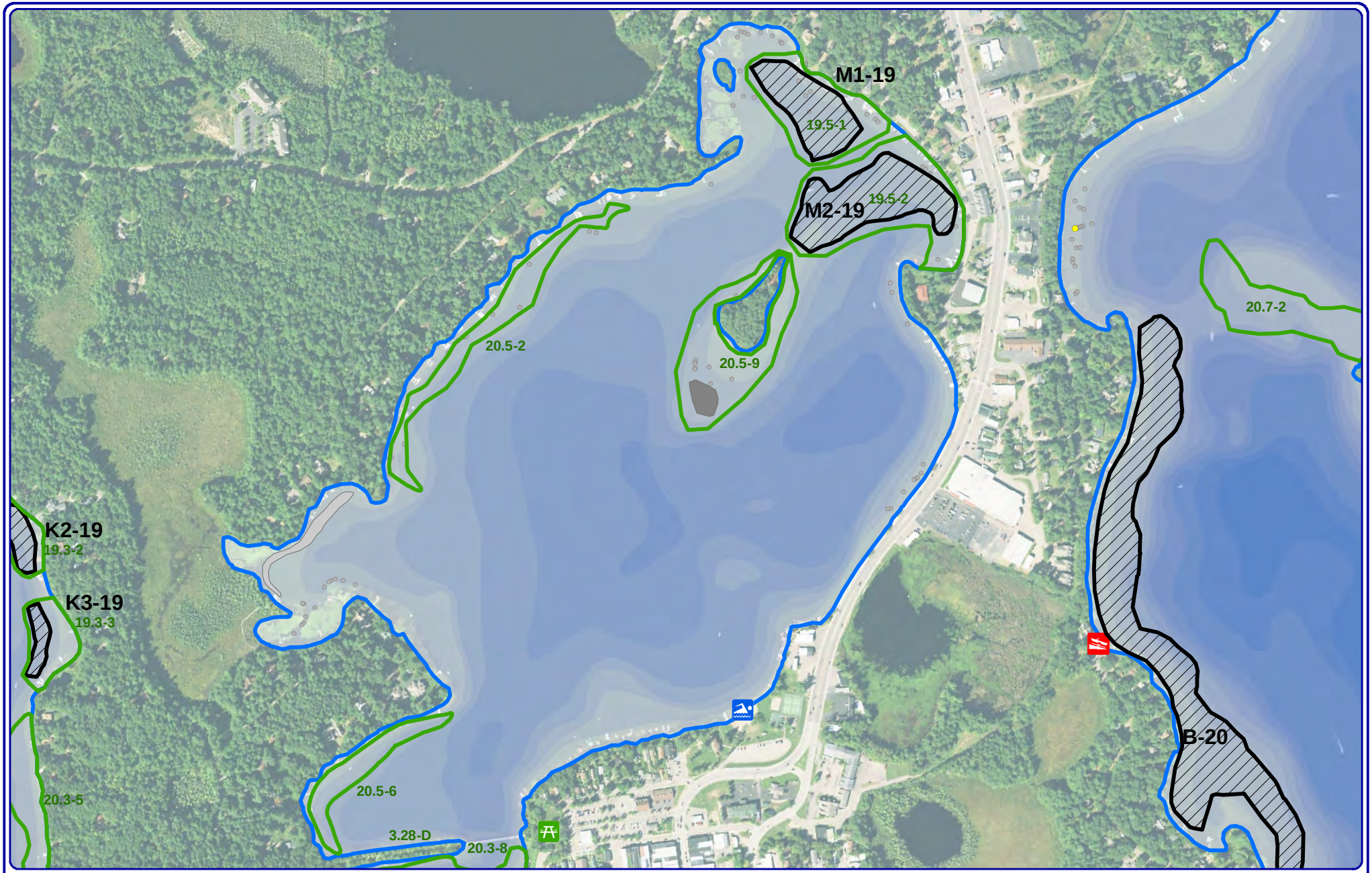
2019-2020 Herbicide Applicaiton Area

Map 7 (4 of 8 EWM Maps)

Minocqua & Kawaguesaga

Oneida, Wisconsin

Late-Season 2020 EWM Survey Results

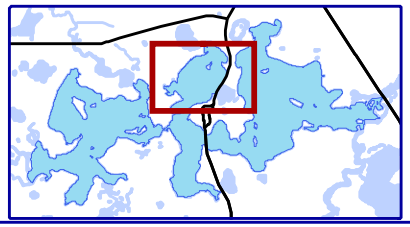


N
W E
S

725
Feet

Onterra, LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR,1972
- digitized by Onterra
Orthophoto: NAIP, 2018
Aquatic Plants: Onterra, 2020
Map Date: October 5, 2020 - EJH



Legend

EWM Survey Results (September 14-17, 2020)

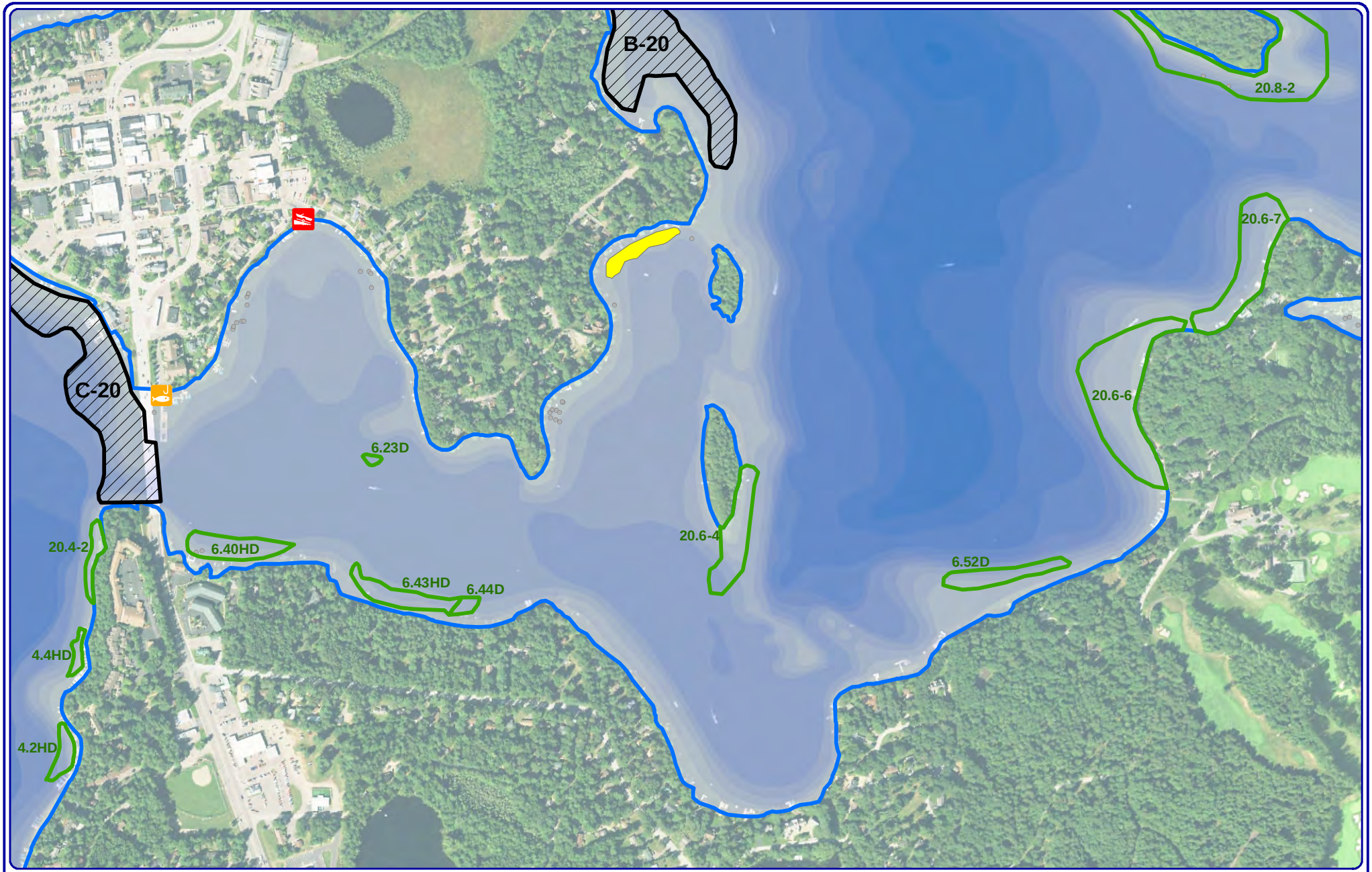
- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony
- 2020 Hand-Harvest or DASH Location
- 2019-2020 Herbicide Applicaiton Area

Map 8 (5 of 8 EWM Maps)

Minocqua & Kawaguesaga

Oneida, Wisconsin

Late-Season 2020 EWM Survey Results

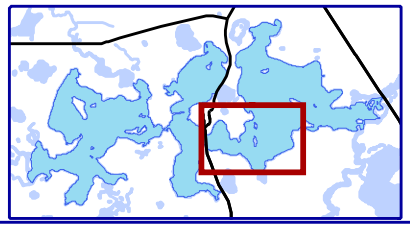


N
W E
S

725
Feet

Onterra, LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR,1972
- digitized by Onterra
Orthophoto: NAIP, 2018
Aquatic Plants: Onterra, 2020
Map Date: October 5, 2020 - EJH



Legend

EWM Survey Results (September 14-17, 2020)

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony

2020 Hand-Harvest or DASH Location

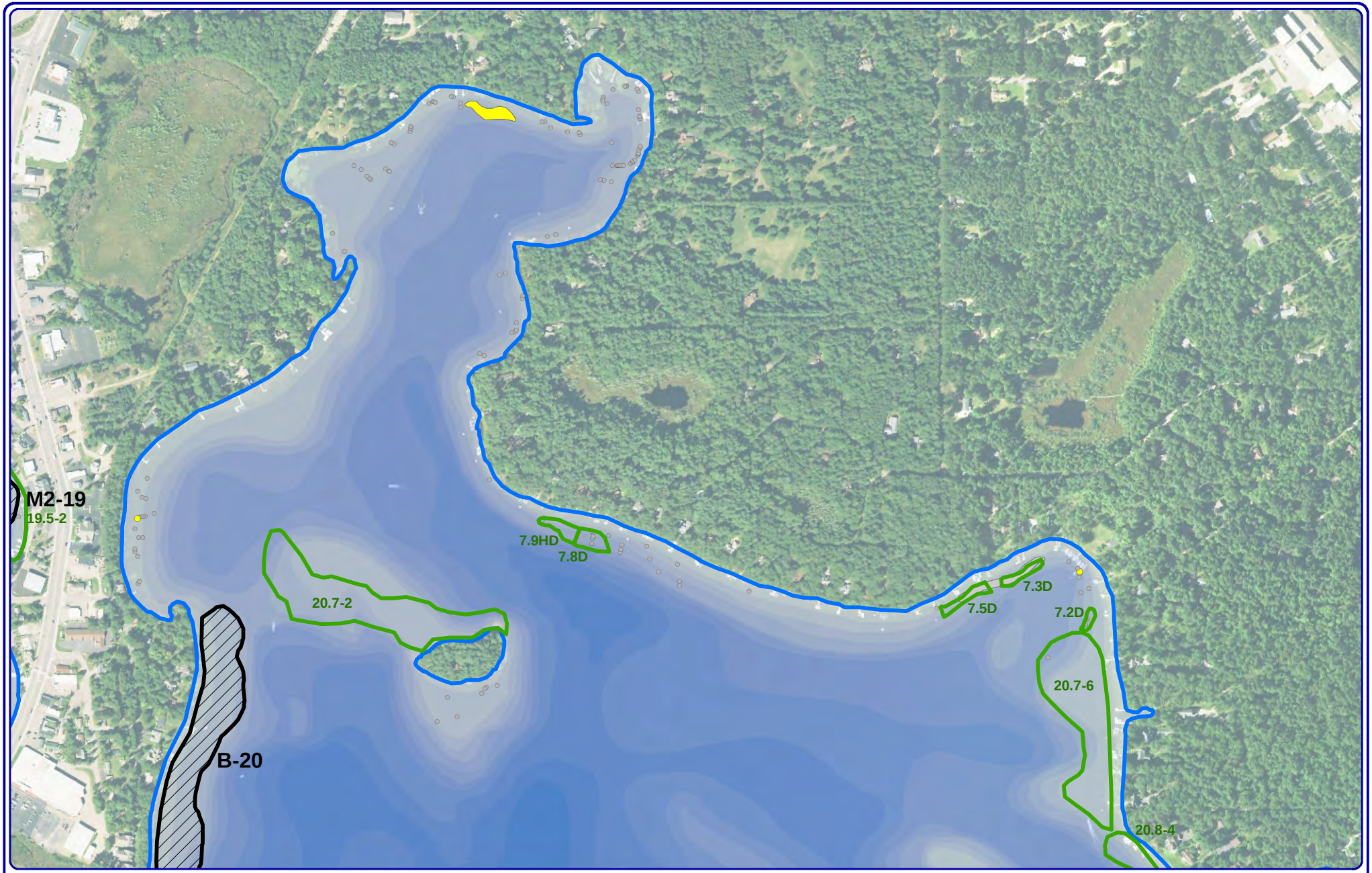
2019-2020 Herbicide Applicaiton Area

Map 9 (6 of 8 EWM Maps)

Minocqua & Kawaguesaga

Oneida, Wisconsin

Late-Season 2020 EWM Survey Results

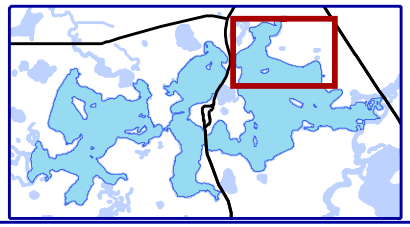


N
W E
S

725
Feet

Onterra, LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR,1972
- digitized by Onterra
Orthophoto: NAIP, 2018
Aquatic Plants: Onterra, 2020
Map Date: October 5, 2020 - EJH



Legend

EWM Survey Results (September 14-17, 2020)

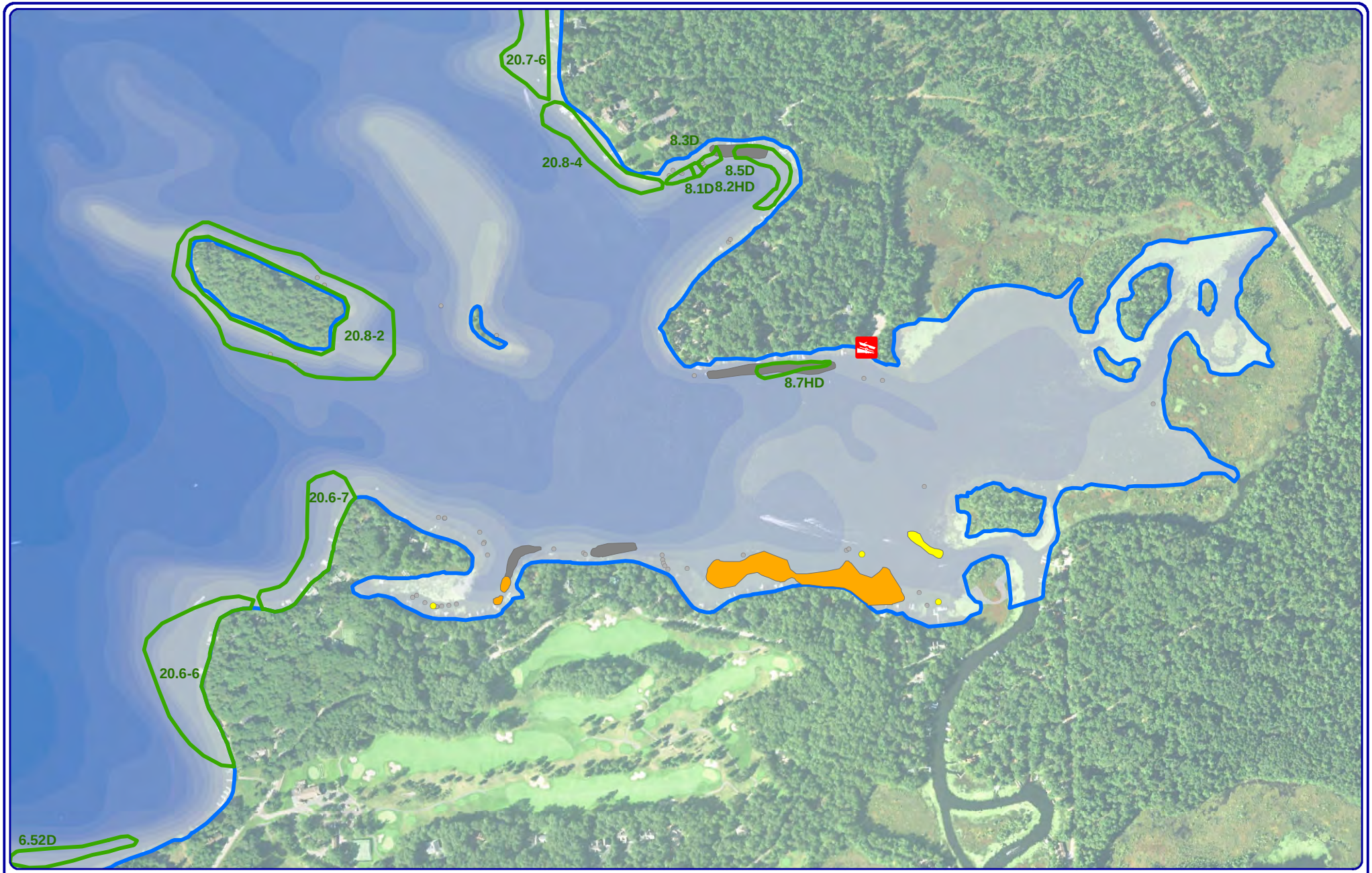
- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony
- 2020 Hand-Harvest or DASH Location
- 2019-2020 Herbicide Applicaiton Area

Map 10 (7 of 8 EWM Maps)

Minocqua & Kawaguesaga

Oneida, Wisconsin

Late-Season 2020 EWM Survey Results

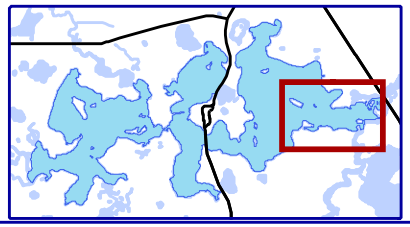


N
W E
S

725
Feet

Onterra, LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR,1972
- digitized by Onterra
Orthophoto: NAIP, 2018
Aquatic Plants: Onterra, 2020
Map Date: October 5, 2020 - EJH



Legend

EWM Survey Results (September 14-17, 2020)

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony

2020 Hand-Harvest or DASH Location

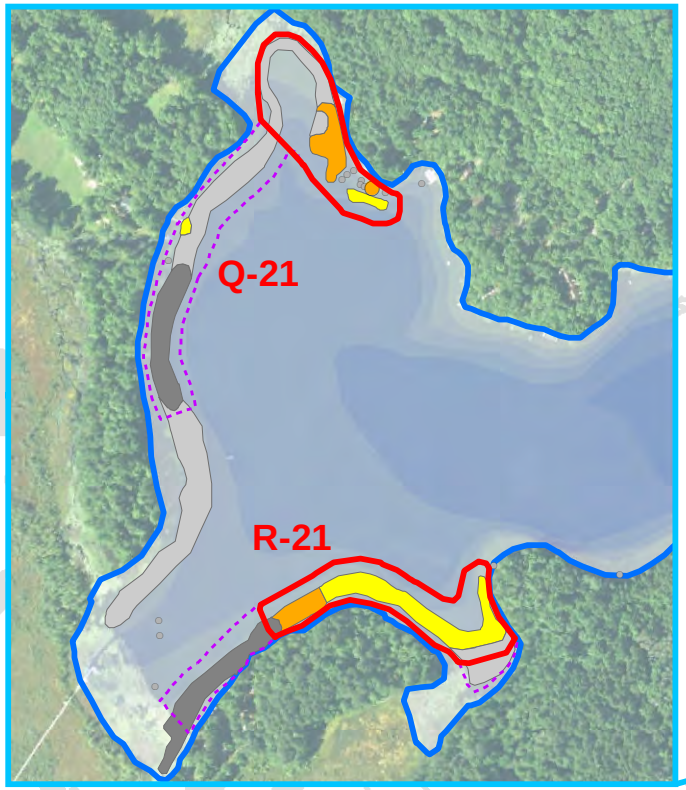
2019-2020 Herbicide Applicaiton Area

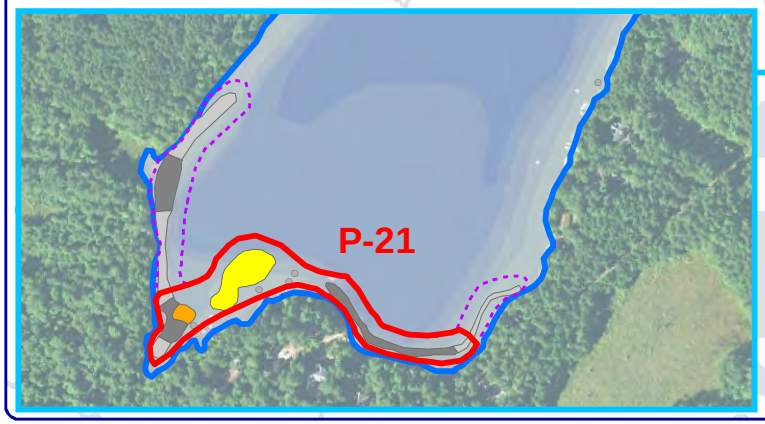
Map 11 (8 of 8 EWM Maps)

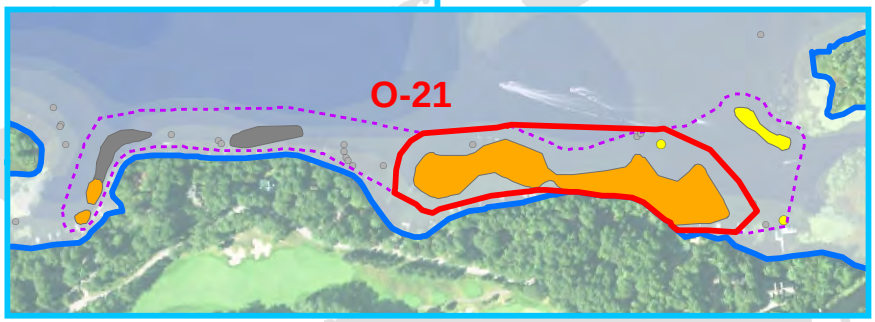
Minocqua & Kawaguesaga

Oneida, Wisconsin

Late-Season 2020 EWM Survey Results







2021 Preliminary EWM Management Strategy
ProcellaCOR Spot Treatment

Site	Proposed Acres	Avg Depth (ft)	Volume (acre-ft)	PDU Rate (per acre-ft)	PDU Total
O-21	6.9	6.5	44.9	4.0	180
Minocqua	*6.9*		*44.9*		*180*
P-21	3.6	5.5	19.8	3.5	69
Q-21	3.3	6.5	21.5	3.5	75
R-21	3.4	4.5	15.3	3.5	54
Kawaguesaga	*10.3*		*56.6*		*198*
Total	**17.2**		**101.5**		**378**

N
W E
S

5,100
Feet

Onterra, LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR,1972 -digitized by Onterra
Orthophoto: NAIP, 2018
Aquatic Plants: Onterra, 2020
Map Date: October 08, 2020 - EJH


Project Location in Wisconsin

Legend

Eurasian Watermilfoil (September 14-17, 2020)

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony

Herbicide Application Area

- Final 2019
- Final 2020
- Preliminary 2021

Map 12
Minocqua & Kawaguesaga
Oneida, Wisconsin

Preliminary 2021 EWM Management Strategy v.2