

From: [ANR - WSMD Lakes](#)
To: [Jensen, Kimberly](#)
Subject: FW: Act 57 ANC Study Committee
Date: Monday, November 13, 2023 10:08:14 AM
Attachments: [Lake Iroquois Aquatic Nuisance Experience using ProcellACOR.docx](#)

Thank you,

Kelcie Bean (she/her)

You may now submit permit applications, compliance reports and fee payments through our online form to expedite its receipt and review: [ANR Online Intake Form](#)



Kelcie Bean (she/her), Environmental Technician
Vermont Agency of Natural Resources | Department of Environmental Conservation
Watershed Management Division | Business & Operation Support Services (BOSS)
1 National Life Drive, Davis 3 | Montpelier, VT 05620-3522
802-490-6195 (o/c) | Kelcie.bean@vermont.gov
<http://dec.vermont.gov/watershed>

The Agency of Natural Resources supports telework, and I work primarily remotely. I am available to connect by phone and email.

Public Records Statement: Written communications to and from state officials regarding state business are considered public records and may be subject to public scrutiny.

From: [REDACTED]
Sent: Sunday, November 12, 2023 9:49 AM
To: ANR - WSMD Lakes <ANR.WSMDLakes@vermont.gov>
Subject: Act 57 ANC Study Committee

You don't often get email from [REDACTED]. [Learn why this is important](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.


November 12, 2023

ANR.WSMDLAKES@VERMONT.GOV

Attention: ACT 57 ANC STUDY COMMITTEE

Please accept this attachment presented to the ACT 57 ANC Study Committee as testimony in favor of using ProcellaCOR as an Eurasian Watermilfoil treatment Control mechanism in Vermont Lakes and Ponds from Lake Iroquois Association.

Thank you,

, President
Lake Iroquois Association
P.O.Box 569
Hinesburg, VT 05461



NOVEMBER 12, 2023

ANR.WSMDLAKES@VERMONT.GOV

ATTENTION: ACT 57 ANC STUDY COMMITTEE

LAKE IROQUOIS IS A 247 ACRE LAKE IN CHITTENDEN COUNTY. IT HAS A PUBLIC BEACH AND PUBLIC BOAT ACCESS AND IS SURROUNDED BY FOUR TOWNS – WILLISTON, HINESBURG, RICHMOND, AND ST. GEORGE. AT APPROXIMATELY 10 MILES FROM BURLINGTON AND THE MOST HIGHLY POPULATED COUNTY IN THE STATE, IT IS HEAVILY USED.

IN 2023, THE GREETERS INSPECTED OVER 2800 BOATS ACCESSING THE LAKE – AND THE GREETERS ARE ONLY ON DUTY FRIDAY THROUGH SUNDAY BETWEEN MEMORIAL DAY AND LABOR DAY.

THE LAKE IROQUOIS ASSOCIATION IS A RELATIVELY YOUNG LAKE ASSOCIATION. IT WAS FOUNDED IN 2007. AT ITS FOUNDING THE ASSOCIATION FACED TWO MAJOR PROBLEMS: HIGH NUTRIENT CONTENT WITH SEDIMENT VISIBLY WASHING INTO THE LAKE AND A LARGE AND SPREADING EURASIAN WATERMILFOIL INFESTATION.

THE ASSOCIATION IMMEDIATELY BEGAN AN ORGANIZED EFFORT ADDRESS THESE PROBLEMS:

1. SETTING UP A GREETER PROGRAM 2007 WITH THE HOT WATER BOAT WASHER ADDED IN 2017
2. REDUCTION OF PHOSPHORUS LEVELS AND SEDIMENT RUNOFF BY:
 - A. TRIBUTARY MONITORING TO TRACK SOURCES OF POLLUTANTS
 - B. CREATING RAIN GARDENS
 - C. REPLANTING STREAMBANKS TO REDUCE EROSION
 - D. INSTALLING CATCH BASINS TO DIVERT RUNOFF
 - E. OUTREACH AND EDUCATION INCLUDING PUBLISHING A PROPERTY OWNERS MANUAL
 - F. INCREASING PARTICIPATION IN THE LAKE WISE PROGRAM
 - G. AND CREATING A WEBSITE, FACEBOOK PAGE, AND EMAIL LIST

THESE EFFORTS MET WITH NOTABLE SUCCESS BY SIGNIFICANTLY DECREASING THE PHOSPHORUS LEVELS IN THE LAKE: [HTTPS://WWW.LAKEIROQUOIS.ORG/WATER/LAKE-DATA-MAPS](https://www.lakeiroquois.org/water/lake-data-maps)

BY 2022, ONLY 15 YEARS AFTER IT WAS FOUNDED THE LIA HAD BECOME ONLY THE THIRD LAKE IN THE STATE TO REACH LAKE WISE GOLD STATUS WITH 15% OF THE PROPERTIES ON THE LAKE MEETING LAKE WISE STANDARDS.

HOWEVER, NONE OF THIS AFFECTED THE MILFOIL PROBLEM. IN FACT, IT WAS GROWING WORSE AND SPREADING. IN 2014, THE LIA UNDERTOOK A PROCESS TO STUDY THE PROBLEM, RESEARCH OPTIONS, AND DEVELOP AND IMPLEMENT A PLAN TO REDUCE AND CONTROL THE MILFOIL INFESTATION.



THAT PROCESS BEGAN WITH A WHOLE LAKE PLANT SURVEY IN 2014 TO QUANTIFY THE PROBLEM. THE SURVEY FOUND THAT OVER 70 ACRES OUT OF A 100 ACRE LITTORAL ZONE (THE AREA OF THE LAKE WHERE AQUATIC PLANTS CAN GROW) WERE INFESTED WITH EURASIAN WATER MILFOIL.

THE BOARD THEN EXPLORED OPTIONS FOR CONTROL INCLUDING HAND PULLING, DIVER-ASSISTED SUCTION HARVESTING (DASH), BENTHIC MATS, AND HERBICIDE. THIS PART OF THE PROCESS INCLUDED GATHERING INFORMATION FROM OTHER LAKES WHO WERE ALREADY WORKING ON THEIR MILFOIL INFESTATIONS AND USING THEIR EXPERIENCES TO INFORM THE LIA'S DECISION-MAKING PROCESS. THE LIA BOARD FELT THAT IT WOULD BE WASTEFUL TO GO DOWN PATHS THAT OTHER LAKES HAD ALREADY FOUND TO BE INEFFECTIVE OR PROHIBITIVELY EXPENSIVE.

THE OPTIONS THAT THE BOARD LOOKED AT WERE HAND PULLING, DASH, BENTHIC MATS, AND HERBICIDE. HAND PULLING, SINCE IT DID NOT REQUIRE A PERMIT, WAS ALREADY BEING DONE BY MANY PEOPLE AROUND THE LAKE. HOWEVER, IT WAS CLEAR THAT GIVEN THE SIZE AND DENSITY OF THE INFESTATION THERE WAS NO WAY THAT HAND PULLING WAS OR EVER COULD MAKE A DENT AND THAT IS WAS VERY POSSIBLY ADDING TO THE SPREAD DUE TO THE FRAGMENTATION HAND PULLING CAUSES.

THE BOARD THEN TURNED TO DASH AND BENTHIC MATS. BOTH REQUIRED PERMITS, WHICH WERE GRANTED IN 2016. WHAT THE LIA LEARNED ABOUT DASH WAS:

1. IT WAS SLOW, ½ TO 1 ACRE/WEEK, DUE TO THE DENSITY OF THE INFESTATION
2. EXPENSIVE – UP TO \$10,000/WEEK FOR ONE DASH BOAT
3. COULD STILL SPREAD MILFOIL BECAUSE OF FRAGMENTATION
4. DISRUPTED THE SEDIMENT SENDING LEGACY PHOSPHORUS INTO THE WATER COLUMN.

GIVEN THAT THE LAKE AT THAT TIME HAD 70 ACRES OF MILFOIL INFESTATION, MUCH OF IT EXTREMELY DENSE, IT QUICKLY BECAME CLEAR THAT AT 1 ACRE/WEEK COSTING SOME \$10,000 EACH WEEK, THERE WAS NO CHANCE OF EVER GETTING THE INFESTATION UNDER CONTROL. GIVEN THAT THE SEASON DURING WHICH DASH CAN BE DONE IS MAYBE 12 TO 15 WEEKS, THIS OPTION WAS UNTENABLE.

AFTER THAT, DASH WAS USED ON THE LAKE TO CLEAR SMALLER AREAS WHERE HEAVY BOAT TRAFFIC WAS LIKELY TO CAUSE FRAGMENTATION, SUCH AS NEAR THE BOAT ACCESS. IN ADDITION, A PERMIT FOR BENTHIC MATS WAS RECEIVED AND THE MATS WERE USED IN THE BOAT CHANNEL TO KEEP IT CLEAR. THE USE OF SUCH BOTTOM BARRIERS WAS LIMITED TO SMALL AREAS AND ARE ALLOWED TO BE PLACED ONLY FOR A LIMITED TIME PERIOD BECAUSE THEY KILL EVERYTHING UNDER THEM – NOT AN IDEAL WAY TO TRY TO PROTECT THE NATIVE FLORA AND FAUNA OF THE LAKE. BUOYS WERE ALSO PLACED TO GUIDE BOATS AWAY FROM THE MILFOIL AREAS AND DIRECT THEM INTO THE CENTER, DEEPER PART OF THE LAKE WHERE MILFOIL DOES NOT GROW.



THESE EFFORTS, WHILE COSTLY AND TIME-CONSUMING, WERE SIMPLY NOT ENOUGH. IN FACT, THINGS WERE STILL WORSENING. THE 2019 PLANT SURVEY SHOWED THAT THE LAKE NOW HAD 86 ACRES SERIOUSLY INFESTED. IT ALSO SHOWED AN ALARMING 28% DECLINE IN NATIVE PLANT SPECIES. (ALL THE LAKE IROQUOIS PLANT SURVEYS CAN BE ON THE LIA WEBSITE HERE: [HTTPS://WWW.LAKEIROQUOIS.ORG/WATER/PLANT-SURVEYS](https://www.lakeiroquois.org/water/plant-surveys))

THIS DATA LED TO THE DECISION TO APPLY FOR AN HERBICIDE PERMIT. SUCH A DECISION WAS NOT UNDERTAKEN LIGHTLY. EVERY EFFORT WAS MADE TO FIND A WAY TO PROTECT THE AQUATIC HABITAT FROM DEGRADATION BY THIS INVASIVE WITHOUT RESORTING TO THE USE OF A PESTICIDE, BUT NONE OF THE MECHANICAL OPTIONS WERE WORKING.

THE APPLICATION THAT THE LIA SUBMITTED FOR THE USE OF PROCELLACOR WAS NEARLY 100 PAGES AND INCLUDED:

- INTEGRATED FIVE-YEAR PEST MANAGEMENT PLAN*
- BACKGROUND ON THE LAKE*
- TREATMENT PLAN, INCLUDING TECHNICAL DETAILS OF APPLICATION PROCESS*
- DOCUMENTATION OF CONTROL ACTIVITIES FOR EWM*
- PLANT SURVEY REPORTS*
- PROCELLACOR RESEARCH, TECHNICAL, AND SAFETY INFORMATION*
- MAPS: DETAILED VEGETATION DISTRIBUTION AND PLANNED TREATMENT AREAS*
- APPLICATION FORMS*
- COPY OF THE MAIL NOTICE OF APPLICATION SUBMISSION TO ALL PROPERTIES ABUTTING THE LAKE AND ONE MILE DOWNSTREAM WHICH INVOLVED GATHERING NAMES AND ADDRESSES FROM THE GRAND LISTS OF THREE TOWNS (ST. GEORGE HAS NO PROPERTIES DIRECTLY ABUTTING THE LAKE)*

(THE COMPLETE APPLICATION ALONG WITH OTHER DOCUMENTATION RELATING THIS APPLICATION CAN BE FOUND ON THE LIA WEBSITE HERE:

[HTTPS://WWW.LAKEIROQUOIS.ORG/INVASIVES/MILFOIL-CONTROL-EFFORTS](https://www.lakeiroquois.org/invasives/milfoil-control-efforts))

THE ACTIVITIES LEADING UP TO AND FOLLOWING THE SUBMISSION OF THE HERBICIDE PERMIT APPLICATION AND INVOLVED A NUMBER OF PUBLIC PRESENTATIONS TO THE GENERAL PUBLIC, LOCAL SELECTBOARDS, AND THE LAKE COMMUNITY AS WELL AS DISTRIBUTION OF PRESS RELEASES TO LOCAL AND REGIONAL MEDIA OUTLETS, EMAIL NOTICES TO THE LIA MAILING LIST, INFORMATION POSTED ON THE LIA FACEBOOK PAGE, AND ALL DOCUMENTS POSTED ON THE LIA WEBSITE.

THE PERMIT WAS FINALLY ISSUED IN FEBRUARY OF 2021, NEARLY 1 YEAR AFTER THE APPLICATION WAS SUBMITTED – AND 7 YEARS AFTER THIS MILFOIL RESEARCH AND CONTROL PROJECT HAD BEGUN.



TREATMENT TOOK PLACE ON JUNE 28, 2021.

THE RESULTS WERE:

- *NO VIABLE EWM IN TREATMENT AREA*
- *SCATTERED EWM IN SOUTHERN AREA OF LAKE (HAND PULLED BY LIA MEMBERS)*
- *ROBUST NATIVE PLANT RE-GROWTH FOR MOST NATIVE SPECIES WITHIN AND ADJACENT TO TREATMENT AREA*
- *WATER LILY LEAVES NEAR TREATMENT AREA SHOWED SOME BROWNING ON EDGES IMMEDIATELY AFTER TREATMENT, BUT RECOVERED BY END OF SEASON.*
- *NO ADVERSE IMPACT TO WATER QUALITY. DISSOLVED OXYGEN LEVELS RANGED FROM 8.3 TO 8.6 PPM THROUGHOUT THE WATER COLUMN IN THE TREATMENT AREA.*
- *NO ADVERSE IMPACT TO AQUATIC OR TERRESTRIAL SPECIES*
- *NO RE-GROWTH OF EWM WAS FOUND IN FALL 2021, SPRING 2022, OR FALL 2022 AQUATIC PLANT SURVEYS*

THE POST-TREATMENT AQUATIC PLANT SURVEYS SHOW JUST HOW QUICKLY NATIVE PLANTS REBOUNDED AFTER TREATMENT. IN LESS THAN A MONTH AFTER TREATMENT, NATIVE PLANTS WERE FILLING IN WHERE THE MILFOIL HAD BEEN. SOME EXAMPLES ARE:

- *ELODEA: 26.9% PRE-TREATMENT TO 44.6% POST-TREATMENT*
- *MUSKGRASS: 17.9% PRE-TREATMENT TO 33.8% POST-TREATMENT*
- *WHITE WATERLILY: 7.5% PRE-TREATMENT TO 15.6% POST-TREATMENT*
- *LARGELEAF PONDWEED: 11.9% PRE-TREATMENT TO 22.1% POST-TREATMENT*
- *COONTAIL (CERATOPHYLLUM DEMERSUM): 7.8% PRE-TREATMENT TO 6.5% POST-TREATMENT (NOTE: COONTAIL IS KNOWN TO BE SLIGHTLY SENSITIVE TO PROCELLACOR. HOWEVER, BY FALL 2022 IT HAD REBOUNDED TO 10.1%)*



IN CONCLUSION:

THE CAREFUL USE OF PROCELLACOR ALLOWED CONTROL OF THE INFESTATION OF INVASIVE MILFOIL AND IT ALLOWED NATIVE AQUATIC PLANT SPECIES TO QUICKLY REBOUND. ALONG WITH DECREASING PHOSPHORUS LEVELS, LAKE IROQUOIS IS NOW HEALTHIER AND IN A MORE BALANCED AND NATURAL STATE THAN IT HAS BEEN IN MANY YEARS.

IN ADDITION, IT WAS MORE COST EFFECTIVE. THE IROQUOIS APPLICATION, INCLUDING THE EXTRA COSTS OF PLANT SURVEYS, NOTIFICATION MAILINGS, AND THE HIRING OF CONTRACTORS FOR THE APPLICATION AND WATER TESTING, COST CLOSER APPROXIMATELY \$1500/ACRE AND THE TREATMENT TOOK ONLY ABOUT HALF A DAY.

WHAT WAS EXPERIENCED AT LAKE IROQUOIS IS AN EXAMPLE OF WHAT CAN EASILY HAPPEN TO A LAKE WHEN AN INVASIVE IS ALLOWED TO SPREAD OUT OF CONTROL. IT DOESN'T TAKE LONG TO DAMAGE AN AQUATIC ECOSYSTEM. THE SCIENCE AND THE DATA ARE CLEAR. THE CAREFUL AND CONTROLLED USE OF PROCELLACOR WORKS AND DOES NOT CAUSE ADVERSE EFFECTS ON PLANTS, ANIMALS, OR HUMANS. IT REDUCES LARGE INFESTATIONS QUICKLY AVOIDING THE POTENTIAL PROBLEMS CAUSED BY HAND PULLING OR DASH SUCH AS FRAGMENTATION, DISRUPTION OF THE LAKE BOTTOM, OR IN THE CASE OF BENTHIC MATS – KILLING EVERYTHING UNDER THEM.

THE AQUATIC HERBICIDE PERMITTING PROCESS IN VERMONT IS ONE OF THE STRICTEST IN THE NATION. IT IS CAREFUL, RIGOROUS, AND MOST IMPORTANTLY, BASED ON ACTUAL DATA AND SCIENTIFIC EVIDENCE. AS THE IROQUOIS EXPERIENCE SHOWS, THE PERMITS HAVE SIGNIFICANT REQUIREMENTS THAT ENSURE HERBICIDE USE IS MINIMIZED, AND THAT A FULLY INTEGRATED PESTICIDE MANAGEMENT PLAN IS IN PLACE AND IS IMPLEMENTED. WITH SO FEW TOOLS AVAILABLE TO PROTECT OUR PUBLIC WATERS FROM THIS DAMAGING INVASIVE, IT IS IMPORTANT THAT IT REMAIN A VIABLE OPTION IN ORDER TO PROTECT THE AQUATIC HABITATS OF THE STATE'S PUBLIC WATERS.

RESPECTFULLY SUBMITTED,

*[REDACTED], PRESIDENT
LAKE IROQUOIS ASSOCIATION
P.O. BOX 569
HINESBURG, VT 05461*

*[REDACTED], VICE PRESIDENT
LAKE IROQUOIS ASSOCIATION
P.O. BOX 569
HINESBURG, VT 05461*