

# 5 Year Work Plan for Aquatic Invasive Species Management in Raquette Lake 2023 to 2028

Submitted By: Raquette lake Preservation Foundation, Inc.

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## Background

The Raquette Lake Preservation Foundation (RLPF) Inc., is a 501(c)(3) public charity formed for the purpose of preserving, protecting and promoting Raquette Lake, New York. Raquette Lake is located in the Town of Long Lake, Hamilton County, N.Y. in the central region of the Adirondacks. Raquette Lake is the largest natural lake in the Adirondack Park and is the headwaters for the Raquette River. During the season when Boat Launch Stewards are available, approximately 1,300 to 1,500 watercrafts launch into Raquette Lake and 2,500 to 3,000 visitors are documented. Many of those watercrafts leave to go elsewhere. Raquette is a key stop on the Northern Forest Canoe Trail, and hundreds of canoes and kayaks pass through every year. All of these watercrafts can potentially collect aquatic invasives from Raquette and carry them throughout the park and beyond. Additionally, if those watercrafts are not cleaned, drained and dried, and uninspected, they can introduce new species of invasive plants or animals into Raquette Lake.

In 2019, RLPF was awarded a competitive grant through DEC Environmental Protection Fund to develop a Lake Management Plan (LMP). The LMP was completed, published and accepted on February 14, 2022. The LMP contains recommendations for future actions by the RLPF and is a key document for going forward. The LMP also contains the result of a detailed survey done in 2020, of the VLM populations in Raquette Lake. A copy of the VLM survey is Attachment A to this plan. This year, 2023, RLPF hired GEI Consultants to re-survey those documented areas infested with VLM in 2020 and compare them to the current situation. Once that report is complete, it will be added to this plan.

Adaptive management will be very important going forward. We look forward to the flexibility of the new DEC/APA guidelines in utilizing adaptive management and Best Management Practices.(BMP)

RLPF has a membership of approximately 150 mostly part time residents. There are ten members of the Board of Directors who are also volunteers.

RLPF currently operates under APA Permit # P2016G-2, #P2019-66 (APA file # 066) and our DEC Volunteer Stewardship Agreement (VSA) #14-05-NO-13.

## The Plan

Our long-standing Aquatic Invasive Species (AIS) program has 5 areas of focus: ***Detection, Prevention, Remediation, Outreach and Education, and Scientific Study***. We plan to go forward with all of these areas.

## **Detection**

*You have to identify what the problem is, before you can solve it.*

### **Shoreline surveys**

As stated above, in 2023 RLPF hired GEI associates to again survey the lake. Instead of a comprehensive macrophyte community survey, this focus was on previously documented areas of VLM infestations. The main contact and surveyor, AJ Reyes, was one of the main team that worked on the project with NEAR in 2020. The result of this survey will heavily influence our harvesting plans for 2024 and 2025. Approximate GPS coordinates of target areas will be reported ahead of time, with final GPS coordinates reported at the completion of the work. Pre and post visual surveys will also be conducted.

GEI was also asked to re-evaluate the presence of Inflated Bladderwort, (*Utricularia inflata*). In our LMP Inflated Bladderwort is cited in several places as “may require future management.” Also from our LMP pg. 16; “New York does not consider this plant to be an invasive species, however it is highly aggressive and is considered a nuisance species in surrounding areas and has rapidly colonized new areas within Raquette Lake...It is a competitive plant that has the potential to impact and outcompete other plant species, reduce biodiversity, and impede recreation. Its rootless, sprawling growth-form allows it to cover and shade out other macrophytes.”

From here on, RLPF will strive to have professional surveys conducted every 3 – 5 years, however, professional surveys are always dependent on the fiscal realities of our organization. This year, RLPF launched an “Adopt a Shoreline” program. Seven new members and five returning members attended an APIPP AIS identification program in August. Those twelve individuals have made a pledge to at least keep eyes on their own shoreline. The thought is that the more people with eyes, even if just on their own shoreline, the better. This will be an on-going effort to get more and more members or even non-members involved with early detection.

There are 16 watercraft access points on Raquette Lake. Most are privately or association monitored. RLPF will hopefully reach a representative from each of those areas in the next 5 years.

### **Lake Management Tracker**

In areas where the bottom is not visible, Lake Management Tracker (LMT) will be utilized as a method of surveying the lake for AIS and used as a long-term program to detect and then to track the growth or lack thereof, of target invasive species, currently in our case VLM.

A few members of RLPF and Blake Neumann from the Adirondack Council, were all trained in September 2022 in the use of APIPP’s LMT Program. Three areas were surveyed: the Village Bay, Sucker Brook Bay, and Lonesome Bay. All information was sent to APIPP and a baseline map was provided. In 2023, only the Village and Lonesome Bay were reported back to APIPP. We will be looking to get someone to take over Sucker Brook in 2024, and will identify other bays and other volunteers to expand this valuable program over the next 5 years. Brian Greene

has suggested that after approximately 5 years of results, he should be able to identify trends and recommend future actions based on those trends.

All of these efforts will be on-going for each year.

### **Prevention**

*The most cost-effective way to solve a problem is to prevent it from occurring.*

### **Boat Launch Stewards**

Boat launch stewards are our first line of defense to keeping AIS out of Raquette Lake. RLPF has worked with Paul Smith's College's Adirondack Water Institute (AWI) and their Boat Launch Steward program for many years as the center piece of our AIS program. Typically, 1,500 watercrafts annually are launched into Raquette Lake at the village launch area. These boats are not just from New York State, but also surrounding states and occasionally Canada.

The DEC Tioga Point Campsite, a water access only public campsite, as well as the Golden Beach Camp area on the lake creates many weekend boaters. The Golden Beach campsite has 200+ campsites but only has the capability to launch paddle craft. It does not have a motorized boat launch.

This year, we were only able to obtain 1 Steward who only worked Tuesday, Thursday and Friday. Additionally, we had 1 volunteer who inspected watercraft at Burkes marina on most Friday nights. As everyone is aware, boat steward staffing is a park wide issue. Last year one boat was found with VLM on it leaving the lake. While this reflects well on our Remediation efforts, it is false security because although we were authorized 2 stewards through the AWI, we were not able to find even 1 until after the 4<sup>th</sup> of July weekend. One steward then worked through Columbus Day, but she only worked on Thursday, Friday and Monday. There was no Saturday or Sunday coverage at all in any location. The low numbers are not necessarily indicative of successful management but are indicative of missing 65% or more of the boat traffic that was launched. Housing in the Raquette Lake area remains a problem and adds to AWI's woes of not being able to hire enough people to cover their entire prevention program. Friday nights and Sunday afternoons are the peak periods of launching and recovering of motorboats.

APIPP has assumed the responsibility for inspecting the hundreds of paddle craft that enter Raquette Lake as part of the Adirondack Canoe Classic, the "90 Miler Canoe Race". Preventing AIS from entering the Brown's Tract outlet keeps it from flowing down stream into Raquette Lake. Unfortunately, years of paddle craft using that stream has caused a large infestation of VLM where the craft put in.

In 2024 and beyond, there will be a DEC paddle craft launch site at South Inlet with no coverage. This launch ramp is called for in the plans for the installation of a new NYS Route 28 bridge over the South Inlet. We have not yet discussed this launch ramp in any Board meeting.

There are a number of Private launch ramps into Raquette Lake and they continue to be controlled by geographic associations, or a commercial business with no public usage allowed. All of these launch ramps are controlled and the public is not permitted to use them.

For the future, we will continue to try and help AWI in the recruitment of boat stewards for Raquette Lake. We have discussed awarding a monetary gift at the end of the season to boat stewards in addition to their stipend from AWI as an incentive to return.

We also plan on exploring housing discussions with Adirondack Action to see if there is any way to support them further in their new “housing bank” programming.

Additionally, we will be asking DEC for signage that can be put at all unmonitored paddle craft launch sites and streams.

All of these efforts will be on-going for the next 5 years and beyond.

## **Remediation**

*Okay, we have been invaded, what now?*

### **Hand Harvesting**

Currently hand harvesting is the Best Management Practice (BMP) for AIS infestations. The Town of Long Lake has supported us with grants since 2017 to continue our harvesting program of VLM beds. The town’s grants generally pay for most, if not all of the cost for our hand harvesting each year. We continue to contract with AquaLogic Inc. out of Johnsbury, N.Y. AquaLogic is fully certified and follows the APA and DEC’s BMP for hand harvesting AIS.

AquaLogic has raised their rates, but RLPF has absorbed the additional cost.

The main inlet to Raquette in the Village Bay, (Brown’s Tract), is completely contaminated with VLM, and has not been surveyed for other AIS. In the past, the APA has denied RLPF a permit to harvest the stream, therefore our village efforts are to contain the VLM up to the inlet, since it probably will be perpetual.

Our survey results will be evaluated each Fall and then again in the Spring. Because of the irregularities of the growth of VLM and the many different areas and ecosystems within Raquette, The RLPF Board needs to determine the priority area for harvesting using our LMP, survey results and adaptive management each year. Additionally, the availability of grant money, and RLPF donor resources will of course all factor into our AIS approach for the year.

Our target species are VLM and *possibly* Bladderwort in the future.

### **Benthic Barriers**

There are 3 Benthic barriers left in Sucker Brook Bay. They are moved in June to the adjacent area to where they were last year, approximately 75 feet from the Western shore, (West Mtn.) They are 12’ x 20’. RLPF will report the exact GPS coordinates of the mats Spring 2024. The mats have been successful in containing the VLM growth in that area. Benthic Barriers will not be used in any area where the VLM beds are more than 30 feet in diameter in accordance with our LMP. We believe we have been successful with the use of benthic mats in eradicating VLM

from both Pug Bay and Little Stillman's Bay. GEI noted a lack of vegetation in both of those bays in the survey they conducted this fall.

The RLPF board understands that benthic mats are recommended in our LMP and that they have been successful for small patches. However, in the future we will be using professional services to lay and remove mats. Most of our current volunteers who have been setting the mats are all over the age of 75. It is no longer safe for them to deploy the mats. Also, a professional firm will be able to provide us with more accurate information on the location and success of the matting process.

Again, this will be an on-going evaluation and adaptive management decision for each of the next 5 years.

Ideally, a localized Watershed Management Plan should be developed. The Marion River comes from the Town of Indian Lake. South Inlet comes from the town of Arietta and Brown's Tract from the Town of Inlet. And, of course, Raquette Lake flows into Long Lake and beyond. The interconnectedness of these waters can not be denied. But to bring everyone to the same tale with enough resources seems like more than a 5 year plan!

## **Outreach and Education**

*The more people who understand the threats of AIS to Raquette Lake, the better the protection and preservation of the lake and surrounding community.*

This is perhaps one of the most important areas in RLPF's efforts to protect Raquette Lake. It is also an area that is the most obtainable. RLPF has been trying to improve our education and outreach programs. As previously mentioned, we started an "Adopt a Shoreline" program this year and already have seven new people committed to watch their own shoreline. We will continue to promote this program for the next 5 years. We are continually trying to incentivize members to get involved.

RLPF will continue to try and engage young people in learning about the importance of AIS identification and control. In 2022 and 2023, board members held mini AIS ID workshops. . Anyone who stopped by and learned about VLM as well as other invasives we *don't* want to be found in Raquette received a coupon for a free ice cream in the Raquette Lake general store. We bought over 30 ice cream cones. We will continue these workshops through 2028.

Educating summer visitors and summer residents in AIS identification and control is a challenging and continuous task. RLPF is trying to improve in this area. We have updated our brochure on RLPF and AIS and had boat key chains made up with pictures of the 5 invasive species which are the greatest threat to Raquette printed on waterproof paper. These are all given out to our members and everyone who launches a boat into the lake from the town boat launch or the largest marina when a steward is present. Our newsletter goes out 3-4 times a year and has evolved into a very professional troth of information. All issues of the newsletter are available on our website. We are working with the Lake Champlain Lake George Regional Planning Board to develop a Homeowners Guide to a Healthy Lake for Raquette lake. It will be given to all

homeowners and made widely available to visitors as well. It should be finished and available by the end of 2023. All of these will continue through 2028.

RLPF is working with the Northern Forest Canoe Trail, The Adirondack Council, Blue Mountain Water Watch and the Long Lake Association as part of a grant for a “Headwaters Coordinator”. We feel this has the potential to help significantly in our efforts to have a wider audience group. The three lake associations provide input into what kinds of messaging they want to get across to groups outside of their typical audience of members. The headwaters team will then work to try to use this messaging to create content and identify individuals that can help the lake associations get this information in front of “more eyes.” Hopefully these new audiences will include tourists and other visitors both to and through the area. By letting these individuals know what types of issues the lake associations care about and are working to address, we hope to get more people interested in the cause – and thereby attract new members, which ultimately can help drive volunteer engagement, increase revenue, and drive wider accountability for lake stewardship.

The RLPF President occasionally attends town board meetings to report on our activities. It is important that local government and businesses understand how the issues we address are directly tied to the economic stability of our towns. Recently she reported that APIPP had found a new infestation of Eurasian Water Milfoil (EWM) in Forked Lake. Although there is a “rapid response” policy in effect, it has not, and probably won’t be, addressed due to short staffing and higher priorities. Rapid response is of great concern and will be on our board agenda for 2024 and beyond.

Through the headwaters campaign and the recruitment of new younger board members, we hope to initiate new communications and ideas throughout the next 5 years.

## **Scientific Research**

*The more we know about VLM and the other aquatic species in the lake, the more effective will be our decisions.*

Currently RLPF sponsors a lake monitoring station maintained by the AWI at Paul Smith’s College. Air temperature, water temperature, daily rainfall, lake level, and barometric pressure are all reported throughout the day. The data collected is collated with other monitoring stations in the Adirondacks and is also available via our web site [rlpf.org](http://rlpf.org). This is a new venture for RLPF and we will work with AWI and other organizations to determine what other parameters would be interesting to record and study.

RLPF continues to work with and provide funding support to the Adirondack Lake Assessment Program (ALAP) and the HCSWCD’s lake data sampling. In our LMP, the water quality of Raquette lake was considered excellent. Page 12, #4 of recommendations for keeping it that way states; “Because the water volume of Raquette is so enormous, the first instances of water quality change are likely to be observed in the basins with major inlets, where the inlet areas serve as settling chambers for sediment and organic material over time. This settling will affect aquatic plant densities as sediments become more nutrient-rich over time. **It is highly recommended to**

**track oxygen loss in bottom waters of the southern two basins, particularly in summer and fall.”**

We will refine our current sampling protocol with HCSWCD. We would like to reinstate year round sampling to help us determine trends, especially in reference to dissolved oxygen. Evaluating our sampling protocol will certainly continue in the next 5 years.

VLM seems to be a moving target. Like a garden, it does much better some years than others. In 2015 the VLM in Raquette Lake had a large apparent growth spurt. When we went to do some matting in 2016 many of the surveyed plots of new VLM were gone. This could simply be as a result of the fact that most of our surveys are done by volunteers, and they just may not have been successful in finding those plots due to numerous factors, as cited in our LMP. RLPF would like to find a scientist or organization interested in carrying on the informal studies with Raquette Lake VLM that Dr. Bob Johnson started at Cornell.

The increased occurrence of HAB's in the fall in Raquette Lake are concerning considering the low nutrient levels in the lake. RLPF will be trying to identify professors at ESF and AWI and/or Cortland that may be interested in studying this and different areas of anecdotal concerns of board members. It would be very helpful to have a venue to identify the blooms, particularly in reference to future management.

Any new partnership or scientifically based research that we positively will be pursuing will be reported to the APA and DEC.

## **SUMMARY**

In 2024, RLPF will need to renew our Volunteer Stewardship Agreement with the DEC. We will do whatever it takes to make sure the process goes smoothly.

RLPF's LMP gave us baseline conditions and several goals and recommendations. Implementation for us will be the greatest challenge given the limited number of volunteers and finite resources that are tasked with this great responsibility. Due to the sheer size of Raquette Lake, there are several different habitats. Some of those include Riverine, Wind-swept sandy shores, Rocky/Boulder filled shallow, Exposed steep drop offs, Unique isolated areas, and gravelly shores as indicated in the LMP. There is no one size fits all solution to management.

In the Town of Long Lakes Comprehensive Management Plan, it quantified realities of the population of Long Lake/Raquette Lake. It has been declining at a rate of 8% for the past several years. This decline is accompanied by a rise in the average age and a significant decrease in school enrollment. That means that young people are not moving here. 96% of the housing is categorized as “seasonal, recreational or occasional.” Retirement communities with no affordable housing for residents. All employment trends indicate the residents work 2 or 3 part time jobs due to the lack of full-time opportunities. Affordable housing, economic seasonality, and a lack of critical services, (the closest hospital to my house is 52 miles in one direction), also affect our ability to manage and attract new members.

RLPF plans to use the results from the latest formal lake survey, harvest reports, matting results, and community input to determine where to best apply the projected resources available over the

next 5 years. RLPF also expects to continue to receive grant money from the Town of Long Lake for AIS management control.

Our experience shows that at the present time, RLPF cannot completely eradicate the AIS in Raquette Lake due to a lack of resources; but what we can do is eradicate it in some areas and in others we will continue to plan a containment approach.

I think you can see that RLPF is very serious and committed to protecting Raquette Lake. We all love our lake. However, the realities and frailty of our communities and the expectations of the government agencies we report to sometimes don't match up. One area we need to improve upon greatly is in our tracking of data and we will try! As a 100% volunteer organization, we hope that the APA and DEC can appreciate this fact and be open to our imperfections.

Detection, Education, Prevention, Remediation, Outreach and Education, and Scientific Study as outlined in this plan, will drive our decisions of AIS management in Raquette Lake from 2024-2028.

Respectfully submitted,

Gail Morehouse, President

Raquette Lake Preservation Foundation



## Appendix A - LMP Detailed VLM survey results.

