

# *the* WATER COLUMN



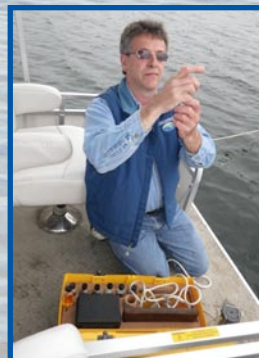
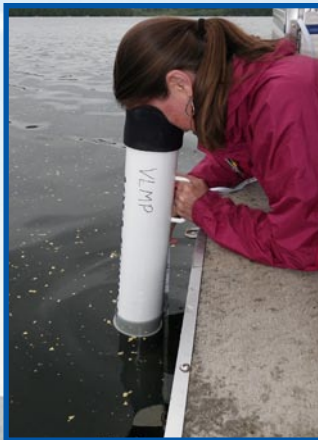
A Publication of the Maine Volunteer Lake Monitoring Program

Vol. 18, No. 1

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## CITIZEN LAKE SCIENTISTS

THEIR VITAL ROLE IN MONITORING & PROTECTING MAINE LAKES



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# President's Message

Bill Monagle  
 President, VLMP Board of Directors

## IN THE WAKE OF THOREAU...

On a recent sunny and calm autumn afternoon while sipping tea with a friend (well, one of us was sipping tea) on the dock of her lakeside home on Cobbossee Lake, and marveling at the splendor before us, my friend remarked, 'as a limnologist, I gather you see things that the average observer cannot when looking out over a lake.' Well, that may be partly true. Having been involved in lake science for over thirty years, I can speculate about what is occurring beneath the lake surface, and my estimate might be close. But in reality, I really don't know for certain the drama that is unfolding on the complex stage of the lake ecosystem in any specific time or place.

All of which reminds me of a comment by Darby Nelson regarding Henry David Thoreau, who is considered by many to be America's first limnologist. In his excellent book, *For Love of Lakes*, Nelson makes reference to Thoreau's rudimentary understanding of lake ecology. He points out that Thoreau observed, and could in great detail, describe the terrestrial environment of which he was a natural inhabitant, but when it came to the lake or pond environment, Nelson wonders if Thoreau's limnological shortcomings (if that's what they indeed were) may have been due to the fact that while Thoreau could see the forest, with lakes, he simply could not "see"

what he could not see. An interesting perspective, wouldn't you agree?

I am sharing this with you because while my friend and I were enjoying our refreshments and conversation, my thoughts went directly to the many volunteer lake monitors and invasive plant patrollers of the Maine VLMP, and how essential your contributions are to more fully documenting and understanding the condition of many of Maine's lakes and ponds. *In essence, you help us better "see" what might otherwise go unobserved and undocumented.* For an excellent expression of the value of the scientifically-based observations that VLMP's many certified lake monitors provide, whether by gathering Secchi transparency readings, or screening for invasive aquatic plants, I direct you to VLMP Executive Director Scott Williams' column, *Lakeside Notes* in this issue of *the Water Column*.

Finally, I cannot stress enough the value of, and appreciation for, the dedication and commitment of VLMP citizen lake scientists throughout Maine, who collect scientifically verifiable data that enables lake management decision makers, and all those who care about Maine's bountiful water resources, to have a better understanding of their ecological health.

**Many thanks to all of you!**

## VLMP Mission Statement

The Mission of the Maine Volunteer Lake Monitoring Program is to help protect Maine lakes through widespread citizen participation in the gathering and dissemination of credible scientific information pertaining to lake health. The VLMP trains, certifies and provides technical support to hundreds of volunteers who monitor a wide range of indicators of water quality, assess watershed health and function, and screen lakes for invasive aquatic plants and animals. In addition to being the primary source of lake data in the State of Maine, VLMP volunteers benefit their local lakes by playing key stewardship and leadership roles in their communities.



# Lakeside Notes

## Celebrating Maine VLMP Citizen Lake Scientists



By Scott Williams  
VLMP Executive Director

Another lake monitoring season begins to wind down, and thousands of field sheets from hundreds of certified lake monitors across the state of Maine are arriving. The mounting documentation is impressive to be sure, but far more impressive is the enormous body of work, dedication, and commitment that these documents represent. In this issue of *the Water Column* we celebrate Maine's statewide team of citizen lake scientists, and the many ways in which they each contribute to the gathering of credible scientific information on hundreds of Maine lakes.

The information gathered by VLMP volunteers is critically important to our understanding of our lakes. Citizen lake scientists provide us with the basis for evaluating declines and improvements in water quality, and the presence or absence of aquatic invaders. They document the current state of healthy native ecosystems as well as the loss of critical habitat for fish and wildlife due to water quality changes or an infestation. The information collected by VLMP volunteers also provides a means of better understanding the effects of climate change on lakes.

Please join us in this celebration in the pages that follow. You will see why the Maine VLMP's volunteer citizen lake scientists are respected throughout the country for their remarkable commitment to monitoring and protecting their lakes, and how the information gathered by VLMP lake monitors is used extensively by researchers, state and federal natural resource protection agencies, educators, planners, local and regional conservation organizations and individuals. You will also see why the VLMP continues to

serve as a model for similar organizations throughout the country and Canada.

**There are many advantages to the VLMP model—which protects lakes through the widespread engagement of citizen scientists.** (Please see article on page 10.) One important advantage is that citizen-centered monitoring efforts have a unique capacity to bring together otherwise isolated groups in a common, community-building effort. For example, this summer the VLMP partnered with the Webb Lake Association and Camp Kawanhee and other members of the local community to conduct two IPP training sessions. This training has helped to forge a new alliance between the lake association and the summer camp that will carry the monitoring effort forward for years to come. (Please see Pam Albertson's delightful article on page 17.)

*Because the VLMP is an organization that encourages and thrives on collaboration and inclusiveness, we are regularly engaged with a diverse group of individuals and organizations that are at the cutting edge of lake science and management—professionals, laypersons, and researchers who are asking new questions, using new technologies, and making new discoveries.*

This nexus of activity puts our volunteers in touch with a nearly continuous stream of innovative ideas and opportunities for monitoring, protecting, and learning about their own lakes. VLMP citizen scientists, for example, are now gathering temperature data for research being done

by Daniel Buckley at the University of Maine at Farmington, Gloeotrichia density data for Holly Ewing's research at Bates College, tracking lake ice-out dates for several research initiatives, and assisting the Maine DEP with advanced forms of lake monitoring and assessment. Maine's clean, clear lakes, and those whose lives are touched by them, are the direct beneficiaries of these collaborations.

As we reach the end of the 2013 lake monitoring season, VLMP staff are already busy at work with our collaborative partners, Advisory Board members and lake monitors, to develop and formulate new lake monitoring strategies for 2014. In light of all of this activity focused upon the future of lake monitoring, you might be thinking that the best days of the Secchi disk—the tried and true tool of volunteer and professional lake monitors throughout the world—are drawing to an end. You would be mistaken! (Please check out the article on page 8.)

We hope that you will enjoy this special celebratory issue of *the Water Column*! When you have finished reading it, we encourage you to pass your copy along to a friend, neighbor, or fellow lake association member, so others will come to know about the outstanding work, commitment, and stewardship of Maine's citizen lake scientists, and the many ways in which they are working to protect the health of Maine lakes! 🌊

# Littorally Speaking

## Moosehead Lake Survey Complete: No Aquatic Invaders Found!

The first-ever, volunteer-powered aquatic plant survey of Maine's largest lake, Moosehead, is complete! The entire shoreline of the 74,000-acre-plus lake has been methodically screened for aquatic invaders. We are very pleased to report that **no invasive species** have been detected.



In 2008, the Maine Volunteer Lake Monitoring Program launched an ambitious program to help promote and support citizen-based early detection efforts in areas of the state where such activities are currently lacking. The objectives of VLMP's Invasive Plant Patrol Jump Start are to: 1) organize a survey team (comprised primarily of seasoned volunteer Invasive Plant Patrollers, supported by VLMP staff) to conduct a comprehensive invasive aquatic plant screening survey and native plant inventory on the target waterbody; and 2) to help "jump-start" a locally sustainable citizen-based monitoring program in the region through outreach, training, and more spontaneous forms of interaction between team members and the host community.

The VLMP decided to pilot its new concept on one of the most highly-valued and more vulnerable lakes in Maine: Moosehead. If such a project could succeed on this grand scale, we surmised, it could succeed anywhere in the state!

A high percentage of the volunteers who participated in this project over its six year timespan remained active throughout, which helped to create a cohesive, highly-competent team. The logistics of surveying a lake the size of Moosehead are challenging to say the least—challenges range from where the team

will make base camp, how meals will be organized, to the more critical issues of access, on-lake communication, and safety. Each challenge was deftly handled by the team, with volunteer team members taking on key roles in all phases of the project: planning, facilitation, technical support, training, outreach, survey activity, plant identification, reporting, and documentation, follow-up, etc.

*Can volunteers be effective and efficient monitors of Maine Lakes? Please consider the following project outcomes and decide for yourself.*

- The shoreline of Moosehead Lake, including the islands, measures 281 miles. If one takes into account deployment of boats over significant distances (often with larger motorized boats towing smaller paddle craft) and the methodical travel back and forth along transects that is required to survey fertile coves and extensive shallows, the actual scope of the survey was substantially greater. The survey was done in short annual



by Roberta Hill

*VLMP Invasive Species Program Director*

increments, taking six years to complete. Actual time on the water however was remarkably short: 23 days!

- During this time the team carefully screened the littoral zone of Moosehead Lake for all eleven invasive aquatic plants legally listed as imminent threats to Maine lakes, as well as other potential aquatic invaders such as Chinese mystery snails and zebra mussels. No invasives were detected. Moosehead Lake now has a "clean bill of health" from which future monitoring efforts can proceed.<sup>1</sup>



- During the course of the survey, the team also documented all the native plants found growing in the lake. A whopping 110 plant species have been documented. Thirty plant specimens of note have been submitted to the Maine State herbarium.

- Work on the second Jump-Start goal— assisting with the development of a locally sustainable citizen-based monitoring program in the region—is off to a promising start and continues to gather momentum. Through outreach conducted by team members, the VLMP has formed a broad coalition of local partners who will be meeting next spring onboard the *Katahdin* in Greenville to discuss next steps for the region.

...continued on next page



*The Hunt for Aquatic Invaders*, a video documentary featuring this Moosehead Jump-Start project, will have its regional premiere at this event. (For more on *The Hunt*, see page 11, and please stay tuned for more on the *Katahdin Citizen Lake Monitoring Forum*.)

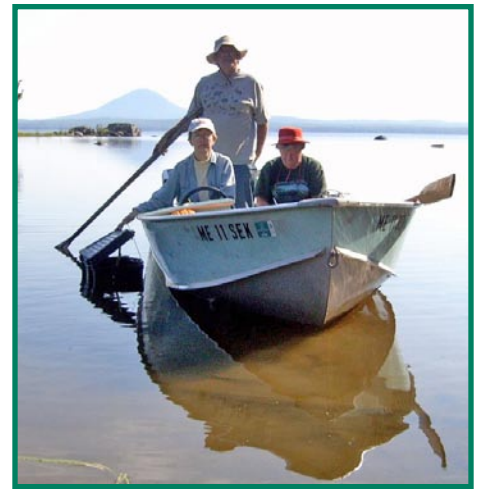
A project of this scale, were it to have been done by professionals, would have been extremely costly, with a price tag in the tens



Volunteer engagement not only enabled this project to happen, it showed that a high-quality survey could be done, efficiently and effectively, by volunteers.

of thousands of dollars—a cost prohibitive to most state agencies, municipalities and non-profit lake conservation groups. Volunteer engagement not only enabled this project to happen, it showed that a high-quality survey could be done, efficiently and effectively, by volunteers.

A number of studies conducted throughout the country have consistently shown that information collected by trained citizen scientists is equivalent to, and indistinguishable from, that of professional scientists, at a fraction of the cost. This groundbreaking project on Maine’s largest lake serves as a powerful case in point! 🌍



1. The VLMP survey team did not monitor the lake for invasive fish. Two non-native fish species are known to be established in Moosehead Lake: small mouth bass (*Micropterus dolomieu*), and white perch (*Morone americana*). Both were the result of illegal introductions.

## Moosehead Lake Survey Project Contributors

### Moosehead Lake Survey Team Members

(2008 – 2013) Followed by number of years each member participated in the survey (no survey activity was conducted in 2010).

#### Volunteers

Curtis Breen (1)	Dennis Roberge (3)
Sally Breen (4)	Matthew Vachon (2)
Mary Jane Dillingham (1)	Eduardo Van den berg (1)
Robert French (5)	Bunny Wescott (5)
Sibyl French (5)	Ross Wescott (5)
Gabriel Gunning (1)	Ellie White (4)
Elin Haugen (4)	Willis White (4)
David Lamon (1)	Mark Whiting (4)
Marsha Letourneau (1)	Keith Williams (4)
Randy Richardson (1)	

#### VLMP Interns

Libby Davis (1)  
 Jamey Epstein (2)  
 Ilse Pukinskis (1)  
 Kelly Stewart (1)

#### VLMP Staff

Jacolyn Bailey\* (2)  
 Christine Guerette\* (5)  
 Roberta Hill\* (4)  
 Jonnie Maloney (1)

\*Indicates staff participation in the survey at least one season as a volunteer.

### Moosehead Survey Supporters

The Moosehead Lake Invasive Plant Patrol Jump-Start Project has been made possible through the generous support of:

Beaver Cove Marina  
 The Betterment Fund  
 The Birches Resort  
 Boater Participation in the Maine Lake and River Protection Sticker Program  
 Friends of Wilson Ponds Area  
 Maine Department of Environmental Protection  
 Maine Outdoor Heritage Fund  
 Maine Water Company  
 Patagonia  
 Plum Creek Foundation  
 Ram Island Conservation Fund of the Maine Community Foundation  
 Underwood Productions  
 Wilsons on Moosehead Lake  
 Private donations from VLMP business sponsors, lake and watershed associations, and individuals

We also wish to thank many new friends and partners in the Moosehead region who have generously welcomed us to their community and provided numerous in-kind goods and services, with special thanks to Liz Cannel (Katahdin Cruises), Joe DeFelice, David Grant, Kay Johnson, Scott Snell (Wilsons on Moosehead Lake), and John Willard (The Birches Resort) for their support of the project documentary: *The Hunt for Aquatic Invaders*, and to Kay and Ralph Johnson for their support, gracious hospitality, and enthusiasm.

# QUALITY COUNTS!

## WHY YOUR CERTIFICATION ASSURES THE CREDIBILITY OF YOUR LAKE DATA

One question often heard at re-certification workshops is, “Why do we need to be Certified and Re-certified to collect lake data?” Many of our dedicated volunteers have been with the program for decades, and they know the routine, so this is a totally legitimate question to ask.

**Collecting water quality data can be fun but it is a very serious mission. Many water management decisions are made based on the data we collect on our lakes.**

Some of these cost money – money that ultimately comes out of the pockets of us taxpayers. Over the past few decades, the legal question of data reliability has been raised in the courts. This has caused both EPA and DEP to comply with both federal and state legislation aimed to control the

quality of data collected from Maine’s waters. EPA established the requirement that entities conducting water quality monitoring data submit Quality Assurance Project/Program Plans, or QAPPs, which they approve. In fact, all data on which environmental decisions are made must be collected under an approved QAPP. The first Maine Lake Assessment QAPP was approved nearly a decade ago and addresses the ‘who, what, when, where, why and how’ of lake data collection. We are routinely audited to make sure we are complying with the elements documented in the QAPP.

Within the last 5 years, additional steps have been taken to make sure that data analyzed in laboratories (private, university and governmental) are providing analyses and results that achieve quality standards through a lab certification process. To be certified, labs need to submit an extensive application which includes their standard operating procedures, data quality objectives, and other pertinent information, along with a fee which is determined by the number of analyses they offer. They must also run blind test samples and produce results that prove method proficiency for each parameter they want certification to



by Linda Bacon  
VLMP Quality Assurance Officer;  
Maine Department of Environmental  
Protection, Aquatic Biologist

analyze; they must also submit to routine audits and correct identified deficiencies.

Certifications are quite common these days. Many vocations require professional licenses or certifications which need to be renewed at some particular frequency. Equipment ranging from medical devices to gasoline pumps are certified to assure they are working properly. Would you eat at a restaurant that has not passed a health inspection or employs workers that have not been ‘ServeSafe’ certified in food handling? **In all cases, certification processes are a means of making sure the ‘customer’ is receiving the best treatment using the most accurate means. We want the same for Maine’s lakes. We want our volunteers to be the best at what they do, use equipment that is functioning properly and labs that are top notch!** We’ve always wanted the best for Maine lakes, and now both the Federal and State governments do too!



## THE VOLUNTEER MONITOR'S PERSPECTIVE ~

When my husband and I were approached and asked to consider becoming the VLMP Kennebec Regional Coordinators, I thought, “Gee...I really don’t know...what’s involved?” Well that was several years ago and I’ve thoroughly enjoyed getting to know the Kennebec County volunteers, working with great people like Linda Bacon on planning and implementing the annual Secchi and dissolved oxygen re-certification workshops and interacting with the terrific staff at the VLMP office.

As a matter of fact, I so enjoyed the process that when the Kennebec County data entry person had to resign due to health issues, I said: Hey... I’ll try that task too! It’s been a work in progress but I’ve really enjoyed not only being involved in the Water Quality monitoring part of VLMP and the Invasive Plant Patrol Program, I also now have a very clear understanding of the administrative responsibilities that these important volunteer positions involve, too!

~ Susan Therrien-Fenn





# AQUATIC SPECIES IDENTIFICATION CARDS

*"What is this spiny little plant that is growing on the lake floor?"*

*"Does curly-leaf pondweed ever produce floating leaves?"*

Do you ever wish you had a compact, easy-to-use, plant ID 'cheat sheet' with you when you were out on (or in) the water? A mini-field guide that covers native plants as well as the invaders? Look no further! The VLMP now has a nifty set of sixteen 3.5" x 4.5" full-color, fully-waterproof plastic plant ID cards. The cards are bound by a binder-ring and hung on a carabiner, which means you can hook them on to your belt-loop or swimsuit strap and go! It also means that the set of cards may be easily expanded as new cards become available.



Six additional cards are already being planned for 2014!

Flip up the cover card, and you will find photos and concise descriptions for the five invasive aquatic plant species known to be in Maine, and twenty-four of Maine's more common native aquatic plants, color-coded (red for invasive; green for native) to help you tell the good plants from the bad.

The first printing of 500 sets sold out in pre-orders! The second printing is now available at \$12.00/set.

**Contact the VLMP to get your set today!**

*(Dare we mention stocking stuffer potential?)*

Please note: This set only includes five of the eleven invasive plants on Maine's prohibited list; the remaining six will be added in 2014.

## Have You Seen This Snail in Your Lake?

Chinese mystery snails, native to parts of Southeast Asia, were brought to this country as a food source for Asian markets. It is believed that imported snails were intentionally released in some areas to create a locally-harvestable supply. Since their introduction, Chinese mystery snails have spread to many parts of the United States, and can now be found in a number of Maine lakes and ponds.

Mature Chinese mystery snails are distinctively large—the size of a walnut or golf ball. Though they spend a good portion of their lives underwater, half-buried in the bottom sediments, they may also be encountered with their trap doors sealed up tight, floating along at the water's surface. This time of year Chinese mystery snails begin migrating to deeper waters where they will overwinter.



Chinese mystery snail  
(*Cipangopaludina chinensis malleatus*)

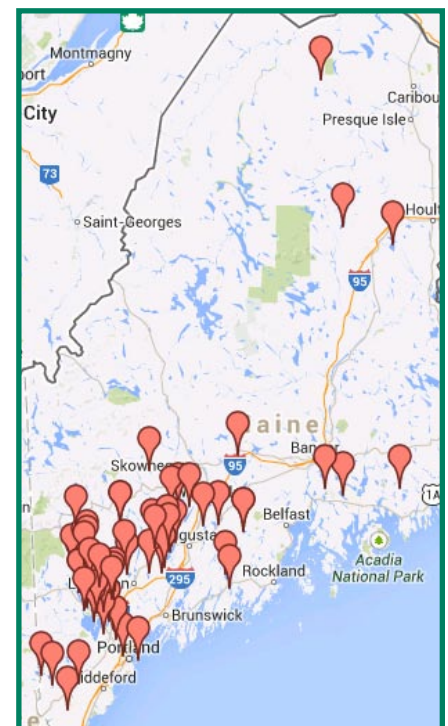
Once in a body of water, the Chinese mystery snail may be transported, as adults or tiny juveniles, via bait buckets and water holding areas on boats. Like other snail species, this species may serve as a vector for various parasites and diseases.

The VLMP manages a statewide database on reported sightings of *C. chinensis malleatus*. You can help us get a better handle on the statewide distribution of this invasive organism by reporting any sightings to VLMP at 207-783-7733 or vlmp@mainevlmp.org.

To see if Chinese mystery snails have been sighted on your lake, please check out the VLMP's new interactive map on the Lakes of Maine website, and click on the **Chinese mystery snail sightings** link in the 'Recent Library Additions' sidebar. [www.lakesofmaine.org](http://www.lakesofmaine.org)

#### References:

1. Martin, Scott M. 1999. Freshwater snails (Mollusca: Gastropoda) of Maine. *Northeastern Naturalist*.
2. *Cipangopaludina chinensis malleatus* (Reeve, 1863). Fact sheet by Gulf States Marine Fisheries.



# IS TECHNOLOGY RENDERING THE SECCHI DISK OBSOLETE?

By Scott Williams  
VLMP Executive Director

The humble Secchi disk continues to be an invaluable tool for measuring lake health by volunteer lake monitors, as well as professional lake scientists. In fact, today the information yielded from Secchi disk (SD) readings is even more useful than it was some 150 years ago, when Father Pietro Angelo Secchi (scientific advisor to the Pope, and astrophysicist) first used the disk to measure the transparency (clarity) of the Mediterranean Sea. We now know that many other indicators of lake water quality generally correlate well with lake transparency readings. **But the SD has some real advantages over the processes involved in gathering many of these more advanced indicators. They include the following:**



1. **Simplicity:** The procedure for taking a reading is very easy, and can be learned by anyone in a short period of time.
2. **Quick results:** The results are nearly instantaneous – no need to wait for a lab report!
3. **Inexpensive:** Secchi disks and viewing scopes are downright cheap, compared to most other instruments and devices used to gather lake data, and compared to the cost associated with laboratory analysis of samples.
4. **Consistency:** When VLMP and DEP staff train a group of lake monitors to take Secchi disk readings, variation from one individual to the next is generally minimal – usually only one or two tenths of a meter, which in a lake with average readings in the 6 meter range is only about 3%. Readings can be reliably compared from one individual to another.
5. **Abundant historical data for comparison:** More Secchi disk readings exist for lakes throughout the world than any other form of lake data. In 2013, Maine VLMP lake monitors alone took more than 3,700 Secchi readings! Often, when looking for historical information on a lake to determine whether or not water quality changes have taken place, Secchi data is the best, and only information available.

Secchi disk measurements are used to indirectly measure lake biological productivity by estimating the concentration of algae in the water. Increasing algal density causes lake water to become less clear, resulting in shallower Secchi readings. Other factors can influence water clarity as well, including the concentration of natural humic acids that leach from wetland plants, causing lake water to have a root beer-like color, and suspended sediment from wind and wave turbulence. Nonetheless, Secchi readings are a reliable method of assessing lake water quality in most lakes.

## NOT BY A LONGSHOT!

Are Secchi data alone sufficient for analyzing lake water quality? Not necessarily. Does current research suggest that we may be monitoring lakes using new methods and technology in the future? No doubt there will be changes. But is the Secchi disk, and the value of the information that it provides becoming obsolete, or less valuable? Absolutely not! In fact, a number of recent experiences have reinforced the value of Secchi data to Maine's lakes:

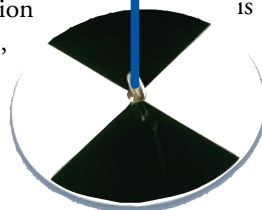
- In 2012, Lake Auburn experienced a severe algal bloom that resulted in the depletion of dissolved oxygen throughout much of the lake in the late summer, resulting in a substantial die-off of the lakes' sensitive lake trout population. The precipitous decline in Lake Auburn's water quality that occurred last year is being investigated by a group of highly qualified lake scientists who are working with Auburn Water District staff to better understand the complex interconnected events that contributed to the decline. Water District staff have increased the frequency

“With the problems we've recently experienced on Lake Auburn, and all of the intensive monitoring we have been doing, the Secchi disk, by far, provides the most useful and important glimpse into what is going on.”

Mary Jane Dillingham  
Water Quality Manager  
Auburn Water District  
Lewiston Water Division

and intensity of monitoring the lake, studying a wide range of indicators of lake health. Interpreting the data from this effort requires an in-depth understanding of lake system dynamics. The group communicates routinely by email, in addition to a number of in-person meetings that have taken place at the lake during the past several months. Almost invariably, the first question asked during these meetings is: “What was the most recent Secchi reading for the lake?”

- Satellite imagery is being used increasingly to estimate lake water quality. The primary use for this information is to estimate the concentration of algae growth in lakes that are not being monitored because of inaccessibility. The sophisticated (and very costly) technology used in this process is dependent on the availability of “ground-truthed” data gathered by volunteer lake





# 2013 INVASIVE PLANT PATROL (IPP) WORKSHOP SEASON

With thanks to our outstanding IPP hosts (listed below) and other supporting partners from across the state, we are pleased to report yet another enormously successful training season.



Preparing for the day ahead, a group of Invasive Plant Patrollers enjoy a beautiful summer morning on Bickford Pond.

Eighteen workshops were conducted across the state. The 2013 training schedule included: 8 Introductory Workshops; 4 Survey Field Methods Workshops; 1 Advanced Plant ID workshop; 3 IPP Leadership Trainings; 2 Manual Control Workshops; and 1 special training session for high-school students.

Four-hundred-nine individuals attended one of more training events during the 2013 season. Nearly 3500 individuals have now been trained through VLMP's IPP program. Seventy-four trainees opted for certification this summer, bringing the number of certified plant patrollers in Maine to 559. The emphasis on training and supporting the IPP teams continues, and the number of active teams in the state is fast approaching 100.



The Introductory workshop provides plenty of opportunity for hands-on learning with live native and invasive plants.

## 2013 Invasive Plant Patrol Hosts

30-Mile River Watershed Association  
Allagash Wilderness Waterways  
Androscoggin Lake Improvement Corporation  
Auburn Land Lab  
Belgrade Region Conservation Alliance

Island Falls Lakes Association  
Jaybird Pond  
Kennebago Lake Association  
Lake Anasagunticook Association  
Lake Webb Association, Inc.

Bickford Pond Association  
Camp Kawanhee  
Clemons Pond Association  
Crawford Lake Association  
Crescent Lake Association  
Damariscotta Lake Watershed Assoc.  
Dexter Lakes Association  
Echo Lake Association  
Edward Little High School  
Friends of Cobbossee Watershed  
Friends of Wilson Ponds Assoc.



We enjoyed our trip to the Allagash where we provided IPP training to the Maine Department of Conservation's Allagash Rangers.

Green Lake Association  
Hancock County Lakes Alliance  
Hancock County Soil & Water Conservation District

Panther Pond Association  
Pickerel Pond Association  
Piscataquis County SWCD  
Rangeley Lakes Heritage Trust  
Raymond Pond Association  
Raymond Waterways Protective Assoc.  
Sebasticook Lake Association  
Sebec Lake Association  
Sokokis Lake Association  
Thomas Pond Association  
Washington Lakes Association

York County Invasive Aquatic Species Project  
York County Soil & Water Conservation District

[Secchi disk article, continued from previous page](#)

monitors and their trusty Secchi disks, because the Secchi data are used to calibrate the models used by the satellite imagery equipment.

- Two years ago, I spent a morning working with a lake research scientist who had developed an integrated system of probes, pumps, optical sensors, and electronic communications modules - all of which were housed in a 5 foot high metal cage that required two people to slowly lower the device down into the water column. The remarkable apparatus had the capability of providing immediate information on a wide range of lake water quality indicators, all of which appeared on an interconnected laptop computer in the boat in graphic format. This powerful, innovative

tool could be especially valuable to researchers sorting through the complexities of lake ecosystem dynamics. I was pleased to have had the opportunity to participate in the demonstration. Just before we left the monitoring station, the project manager asked me if I would take a Secchi disk reading as a reality check!

The next time that you take a Secchi reading on your lake, remember that while this device may be simple, and even primitive, compared to the latest and greatest technological innovations and gadgets that are available to monitor lakes, it is still a highly accurate, precise, and elegant way to learn a great deal about the health of our lakes. 🌊

# The VLMP Advantage: Effective and Efficient!

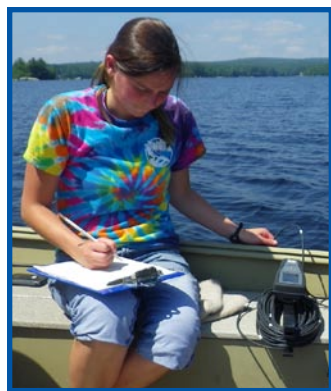
For more than four decades, trained volunteer lake scientists have gathered a wide range of information about thousands of Maine lakes. That information (data) is the foundation of knowledge, understanding, and ultimately, their protection. The VLMP “model” approach to lake monitoring –engaging citizen scientists in the gathering of lake data– is not only an effective way to gather vital information on lake health, but also engenders stewardship through the long-term commitment that so many volunteers make to monitoring and protecting their lakes.

In addition to being a very effective way to gather information that is used to protect lakes, the VLMP model is also extremely efficient! Imagine the cost of paying more than 1,000 trained lake scientists (or other paid staff) to travel to several hundred lakes throughout Maine, multiple times during the course of the year, to collect various types of water quality data, or to conduct an invasive aquatic species survey. Such an undertaking would require an enormous budget. But VLMP lake monitors do all of this on their own time. Because volunteer monitors receive high-quality training and on-going technical support, their data are virtually indistinguishable from data collected by professionals!

**There are many advantages to engaging volunteers in the gathering of information on lake health. They include:**

- **Volunteer monitors are deeply connected to their lakes**, and that connection is the basis for the commitment that they are willing to make to gather information multiple times during the monitoring season, over a period of many years.

- **Local lake monitors have a strong sense of what is “normal” for their lakes, and what is not. When a change occurs in their lake, it is much more likely to be recognized, assessed and reported than might otherwise be the case.** Many of the water quality problems and invasive plant infestations that have been documented in Maine lakes during the past four decades have first been reported by local volunteers who have very effectively (and efficiently) acted as “first responders” for their lakes.



- By virtue of living near, or on the lakes that they monitor, **the process of volunteer monitoring is inherently cost-effective!** Maine is a big state, with thousands of lakes. The cost of having paid professionals drive hundreds of miles to take Secchi readings, gather various types of water (or sediment) samples, and/or conduct plant

screening surveys would be prohibitive in most cases. And the work would not likely be done, because funding doesn't exist to support such a vast endeavor in Maine (not to mention the impact to the environment from all that driving around!).

- **VLMP lake monitors are provided with many options for expanding the scope of their monitoring**, and as they increase their knowledge and capacity for doing so, through comprehensive training and technical support from the VLMP, our citizen lake scientists become more effective as lake stewards. In recent years, many lake monitors have received training to provide them with tools needed to expand their monitoring into their lake watersheds.

- **Lakes with VLMP lake monitors routinely undergo comprehensive baseline water quality monitoring** by Maine DEP and VLMP lake scientists, and increasingly, volunteer lake monitors who are willing to assist are engaged in this process.



Lakes that are monitored by VLMP volunteers are checked, tested and evaluated during the late summer every few years for a wide range of indicators of lake health, including Secchi transparency, temperature and dissolved oxygen, phosphorus and chlorophyll levels, pH, color, total alkalinity, anion and cation levels, zooplankton and algae community composition, lake sediment analysis for phosphorus and aluminum, and more! This comprehensive process complements, but certainly doesn't replace the great work of volunteer monitors.

- **And last – but certainly not least – is the invaluable benefit of having trained, knowledgeable individuals living in lake communities throughout Maine.** It is well established that hundreds of VLMP lake monitors throughout Maine provide a great deal of information and guidance to their lake and watershed associations, local conservation commissions, schools, businesses and others, to help the community better understand –and protect– the lake(s) that they monitor. These individuals often take on positions of leadership, helping to ensure the sustainability of lake monitoring and stewardship in their lake communities. The value of their work, over time, to Maine's “lakes program” cannot be over-estimated!

Trained volunteer citizen lake scientists who are invested in the protection of their lakes are Maine's most efficient and effective strategy for gathering information on our thousands of clear, clean lakes. The VLMP model is considered The Gold Standard across the U.S. and among our neighbors to our north, many of whom have applied this model to the protection of their own lakes. Is four decades of volunteer lake monitoring coincidental with the fact that Maine's lakes continue to be among the healthiest in the nation? *We don't think so!* 🌍

~ Contributed by VLMP Staff and Volunteer Lake Monitors



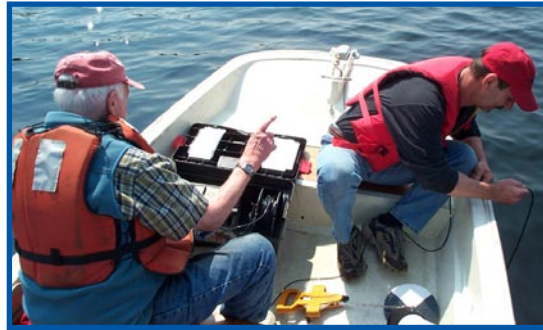
# Water Quality Mentor Program Seeking New Participants!

Contributed by Linda Bacon & Scott Williams

The diversity among our volunteer citizen lake scientists is incredible! Many devoted water quality monitors have dependably gathered Secchi disk transparency readings for decades. A growing number of monitors have been trained to collect temperature and dissolved oxygen data. Some are also taking water samples for phosphorus and other chemical indicators. And VLMP volunteer Regional Coordinators and Data Managers provide invaluable administrative assistance to the program. Assisting with all of this, and more, are VLMP Mentors...volunteers that not only collect advanced water quality data, but who also train other volunteer monitors to gather a wide range of information about their lakes.

The Mentor program was initiated in the mid-1990s around the time the VLMP became a stand-alone non-profit organization. It attracted a handful of dedicated individuals, some of whom had technical backgrounds, and others whose passion for protecting lakes in their

area motivated them to take their training and experience to the next level - and pass it on to others. With the growing number of relatively new water quality monitors in the program, VLMP Mentors will play an increasingly important role in providing training and support to our citizen lake scientists.



In the winter and spring of 2014, we will be offering a series of Mentor training workshops that will likely consist of three 6-hour training and discussion sessions spread out over a 4-6 week period. The first two sessions will be held indoors, and the final session will be spent on the VLMP training boat on Lake Auburn. Becoming a VLMP Mentor is indeed a time commitment, but it also provides a super opportunity

to learn much more about lake ecosystems, while providing assistance to VLMP Citizen Lake Scientists, and playing a key administrative role within the organization. If you are interested in this opportunity, please contact the VLMP office.

## VIDEO DOCUMENTARY: THE HUNT FOR AQUATIC INVADERS



A rough cut of the VLMP documentary *The Hunt for Aquatic Invaders* made its debut to the packed house attending this year's Annual Lake Monitoring Conference. The final cut will be completed soon, and the film is already slated to be shown at a number of events, conferences, and festivals in the coming months. Later in 2014, a link to *The Hunt* will be posted to the VLMP website, and copies will be available on CD for volunteers, lake associations, and others who are interested in helping us share this uniquely-Maine story with audiences across the state and beyond.



Set upon the backdrop of one of Maine's most extraordinary lakes, Moosehead, *The Hunt for Aquatic Invaders* takes the viewer on a very different kind of outdoor adventure, one that not only speaks to the urgency of



the task at hand—preventing the spread of aquatic invaders in Maine—but also provides guidance and inspiration as it explores the vital role that volunteers can play in local and statewide early detection efforts.



## LAKE MONITORS NEEDED:

These high-priority lakes need volunteer water quality monitors. Can you help?

Granny Kent Pond in Shapleigh; MIDAS # 3908

Moosehead Lake in Greenville, MIDAS # 0390

Sawyer Pond in Greenville; MIDAS # 0386



# Thank You! To Our Recent Generous Donors

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*Continued from Page 12*

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## Major Funding

Major funding for the VLMP is made possible by grants from the US Environmental Protection Agency and the Maine Department of Environmental Protection, through Section 319 of the Clean Water Act.

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Ram Island Conservation Fund of the Maine Community Foundation  
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## In Memory Of

In Memory of George Cross~  
Raymond & Josephine Duda  
Cynthia & Michael Hart  
David & Pamela Robbins  
In Memory of Norman Harte~  
Charlotte & Paul Hallett  
In Memory of Howard D. Whiting~  
Little Wilson Pond Improvement Assoc.

## In Kind

And for those of you who have donated your time, expertise, and dedication to the work of the VLMP in the past year - many thanks!

## Lake & Regional Watershed Associations

30-Mile River Watershed Association  
Androscoggin Lake Improvement Corp.  
Bauneg Beg Lake Association, Inc.  
Bear Pond Improvement Association  
Belgrade Regional Conservation Alliance  
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Clemons Pond Association  
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Dexter Lakes Association  
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Great East Lake Improvement Association  
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Green Lake Association  
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Howard Pond Preservation Association  
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Lake Anasagunticook Association  
Lake Webb Association  
Lake Wesserunett Association  
Lakeville Camp Owners Association

Little Ossipee Lake Association  
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Long Pond Association  
Loon Lake Association  
Lovejoy Pond Improvement Association  
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Pickarel Pond Association  
Piper Pond Association  
Pleasant Lake & Parker Pond Association  
Pleasant Pond Protective Association  
Pleasant River Lake Association  
Portage Lake Association  
Rattlesnake Association of Brownfield  
Raymond Waterways Protective Assoc.  
Sabbathday Lake Association  
Sand-Locke Pond Association  
Saturday Pond Watershed Association  
Sebasticook Lake Association  
Sebec Lake Association  
Square Pond Improvement Association  
Summer Haven Lakes Association  
Swan Lake Association  
Taylor Pond Association  
Toddy Pond Association  
Washington Lakes Watershed Association  
West Harbor Pond Watershed Association  
Whitmore Landing Lake Association  
Wilson Lake Association



# 2013 LAKE MONITORING CONFERENCE



Dennis Roberge



A crayfish on display in the interactive exhibit area, trying to steal the show!



Allen Chamberlain is honored for 20 years of lake monitoring.



Many thanks to Phoebe Hardesty (L), Sibyl French (C) and Beverly Libby (R) for their hard work keeping everyone well fed!



VLMP staff and interns pose for a photo.



Invasive Plant Patroller of the Year, Pixie Williams.



Sue Therrien-Fenn and Bruce Fenn receive accolades for being Outstanding Volunteer Regional and Data Coordinators.



Congratulations to lake monitor Katie Carville on winning the kayak prize!



Wendy Dennis is recognized for 35 years of lake monitoring.



Volunteer lake monitors take the Plant Identification challenge.

**SAVE THE DATE!**  
**2014 VLMP ANNUAL CONFERENCE IS SCHEDULED FOR SATURDAY, JULY 19**



Another delicious lunch for all!



# VLMP 2013 ANNUAL CONFERENCE



Invasive Plant Patrol Regional Leaders of the Year award goes to York County SWCD & York County Invasive Aquatic Species Project.



Conference Presenter Holly Ewing (L) discusses monitoring *Gloeotrichia echinulata*.



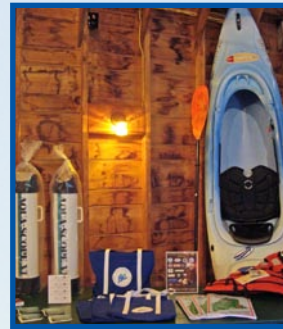
Conference Presenter Karen Wilson displays crayfish to volunteers.



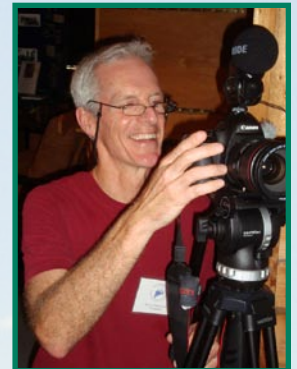
Mike Whitmore (L) of Embden Pond Association and Doug Sears (R) of Carrabec High School receive the award for Invasive Plant Patrol Team of the Year.



Volunteer lake monitors Ozzie Swett (L) and Bruce Fenn (R) are honored for 10 years of lake monitoring.



Many thanks to our generous sponsors for providing these wonderful prizes!



Videographer Steve Underwood is hard at work documenting the annual conference.



Volunteer lake monitors discuss the importance of having an Invasive Plant Patrol team.



VLMP intern Libby Davis (L), DEP intern Mark Dennis (C), and VLMP intern Jamey Epstein (R).



Lake monitor Keith Williams demonstrates the process of making an herbarium sheet.



## The VLMP Celebrates Citizen Lake Science!



# Welcome New Lake Monitors!

## NEW VOLUNTEER LAKE MONITORS CERTIFIED IN 2013

Erik Ahlquist; Chamberlain Lake  
Pamela Albertson; Webb Lake  
Diane Anderson; Panther Pond  
Sylvia Bailey; Concord Pond (Big)  
Whitney Baker; Great East Lake  
George Bardaglio; Androscoggin Lake  
Elwood Beach; Raymond Pond



Joy Beekman; Echo Lake (Crotched Pond)  
Linda Belisle; Schoodic Lake  
Steve Biggers; Abrams Pond  
Alex Blackwell; Alford Lake  
Beth Bond; Sheepscot Pond  
David Bradley; North & Little Ponds  
Judy Bradley; Clemons Pond (Big)  
Mona Brewer; Kennebago Lake (Big)  
Cindy Lou Brock; Sebec Lake  
Dan Buckley; Ballard Pond  
Ellen Busching-Randolph; Toddy Pond  
Murray Campbell; Parker Pond  
Tom Chace; Damariscotta Lake  
Don Champion; Bickford Pond  
Cherrie Cianchette; Long Pond

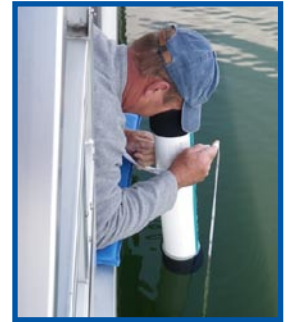
Rocky Cianchette; Long Pond  
Anthony Colello; Rangeley Area Lakes  
Katie Cranston; Kennebago Lake (Big), Kennebago River  
Piper Cronin; Bauneg Beg Lake  
Chris Dadian; Toddy Pond  
Ronald Davis; Webb (Weld) Lake  
Libby Davis; Back (5 Kezars) Pond  
Dave DeLuca; Thomas Pond  
Beth DeTine; Great Pond  
Peter Devine; Garland Pond  
Dave Dyer; Thomas Pond  
David Edsall; Branch Lake  
Patrick Emery; Eagle Lake (Big), Churchill Lake  
Denise Farley; Collins Pond  
Larry Farley; Collins Pond  
Darlene Fontaine; Flying Pond



Susan Gammon; Burgess Pond  
Christine Gestay; Gull Pond  
Paul Gillis; Sabbathday Lake  
Diantha Grant; Sabbathday Lake  
Don Grant; Sabbathday Lake  
Carolyn Gray; Anasagunticook Lake  
Whitney Gullison; Great East Lake  
Paul Hallett; Mattawamkeag Lake, Pleasant Lake  
Sue Hellewell Embden Pond  
Albert Holzwarth; Green Lake  
Sally Hussey; Bauneg Beg Lake  
Arthur Jacobson; Keoka Lake  
Calece Johnson; Holland (Sokosis) Pond  
Kay Johnson; Wilson Pond (Upper)  
Ralph Johnson; Wilson Pond (Upper)  
Jody Jones; Damariscotta Lake  
Sydney Kahl; Hopkins Pond  
Peter Kallin; Long Pond  
Lynne King; Echo Lake (Crotched Pond)  
Leslie Kmiec; Bickford Pond  
Susan LaFleur; Saturday Pond  
Mike Lara; Anasagunticook Lake  
John Laslie; Alamoosook Lake  
Don Lathrop; Threemile Pond  
Nick Leadley; Saddleback Lake  
Leon Leary; Ballard Pond



Normand LeBlanc; Mooselookmeguntic Lake  
Gary Lee; Bickford Pond  
Marsha Letourneau; Square Pond  
Tony Lombardi; Bauneg Beg Lake  
Myron Long; Schoodic Lake  
Jeff Lovejoy; Wassookeag Lake  
Clifford Manchester; Abrams Pond  
Jay McConville; Gull Pond  
James McDevitt; Saint George Lake  
Mary Ann McGarry; Hopkins Pond  
Bret Meck; Collins Pond  
Sandra Meck; Collins Pond  
Debra Morse; Sebec Lake  
Jodie Mosher-Towle; North & Little Ponds  
Matthew Needham; Little Ossipee Flowage (Lake Arrowhead)  
Dineen O'Rourke; Sheepscot Pond  
Ed Palys; Churchill Lake  
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Toni Pied; Belgrade Area Lakes  
Matthew Pines; Trafton Pond  
Lynda Pound; Sheepscot Pond



Steffanie Pyle; Little Pond  
Doug Randolph; Toddy Pond  
Christy Richardson; Wassookeag Lake  
Patricia Ridlon; Bickford Pond  
Kathy Riordan; Alamoosook Lake  
Gwynn Rustad; Kennebago Lake (Big)  
Lindsey Rustad; Kennebago Lake (Big)  
Linda Sallie; Abrams Pond  
Dianne Sample; Thomas Pond  
Constance Sasser; Pleasant Lake  
Brian Scholten; Ballard Pond, Clearwater Pond  
Nicholas Scripps; Alamoosook Lake

Pat Severance; Raymond Pond  
George Sheats; Taylor Pond  
Sally Smith; Green Lake  
Sarah Smith; Kezar Lake  
Todd Smith; Kezar Lake  
Teresa Snow; Halfmoon Pond  
Judith Soule; Rangeley Lake  
William Soule; Rangeley Lake  
Cyndy Stancioff; Sand Pond  
Paul Stancioff; Sand Pond  
Richard Tenney; Toddy Pond  
Robert Van Riper; Varnum Pond  
David Vaughn; Prong Pond  
Sidney Wade; Loon Lake



Deborah 'Rae' Watzka; Halfmoon Pond  
Ed Weimont; Echo Lake (Crotched Pond)  
Robert Weimont; Parker Pond  
Karen White; Wassookeag Lake  
Norman E. White, Jr.; Wassookeag Lake  
Anne Whitten; Bauneg Beg Lake  
Shannon Wiggin; Acadia National Park Lakes  
Sam Wilson; Wilson Lake  
Lynn Wish; Gull Pond  
Daniel Yaeger; Alamoosook Lake  
Mark Zacharias; Pickerel Pond



# CAMP KAWANHEE BRAVES HIGH WINDS



Contributed by Pam Albertsen, Certified Invasive Plant Patroller, Webb Lake Association.

What would eleven Kawanhee counselors and campers, ten Webb Lake Association members and four VLMP staffers be doing out on the lake in 30-knot winds on a Tuesday morning in late July? We wondered that ourselves as the winds picked up and buffeted our tiny crafts around.

But we had already been rained out once, and this was the rain date: this would be our last chance to conduct an IPP Field Workshop on Webb Lake this year. So we all gathered in the breezy, early morning sunshine at Camp Kawanhee, filled with excitement and some apprehension about the health of our lake. The group was divided into three teams and our morning was structured. As we talked and organized ourselves on land, the lake was whipped up by the winds and the white



Once we tucked into Sunday Beach Cove, the survey conditions improved greatly and the real exploration began.

caps threatened to make any peering into the water, no matter what equipment we had, difficult.

After a struggle against the wind and waves to reach our first gathering point, we were able to

we were given immediately allowed us to peer into calm waters. The plants, roots, tiny animals and fish were easily seen. The lake weeds became significant to us. The boys were excited and eager to learn the many names of our native plants. They marveled at the tiny star-like pipeworts, the glistening gel on the underside of the water shield leaves (part of this plant's natural defenses against tiny herbivores), and the delicate lilac flowers of the water lobelia. The discovery of the colonial bryozoan astounded us all, and we took turns gingerly touching its solid gelatinous form.



Bryozoans, also known as moss animals, are primitive invertebrates that form gelatinous globs, often attached to submersed surfaces such as logs, mooring lines or dock posts. Filter feeders, bryozoans sieve food particles out of the water using a retractable crown of tentacles lined with hair-like cilia.

The morning ended with no one capsizing, new knowledge and experience gained, and a very nice lunch at the camp. It was a morning of wonder, useful exercises, and an excellent precursor to the IPP survey that would soon follow. ➡



Webb Lake Association Members learning alongside their young Camp Kawanhee counterparts; part of a new collaboration that has significantly strengthened the Webb Lake IPP effort and expanded the scope of their annual surveys.



Webb Lake Association Members and Camp Kawanhee Staff are now working together to protect Webb Lake from the threat of aquatic invaders.

# VLMP ADVISORY BOARD

## WELCOMES NEW MEMBERS

The VLMP is pleased to welcome several new highly respected and well-known lake scientists to our Advisory Board. The Advisory Board (AB) was formed to provide input and guidance to the Board of Directors, staff and volunteer lake monitors on a wide range of technical, organizational and developmental matters. This distinguished group consists of individuals with unique expertise that is relevant to the operation and development of the program. We look forward to working with our expanded AB as volunteer lake monitoring in Maine continues to evolve.



**Aria Amirbahman** has been a professor of environmental engineering in the Department of Civil and Environmental Engineering at the University of Maine since 1997. He is a graduate of the University of California at Irvine. His areas of research interest are aquatic chemistry and contaminant transport in lakes, wetlands, groundwater systems and coastal sediments. In particular, he has studied speciation

and transport of phosphorus and metals (such as mercury, iron, aluminum and manganese), and their interactions with mineral surfaces and natural organic matter in natural and engineered systems. He is a cooperating faculty member with the School of Policy and International Affairs, and the Center for Research on Sustainable Forests at the University of Maine. Aria has been a visiting professor at the Water Resources Division, U.S. Geological Survey, Menlo Park, CA (1/04-9/04 and 1/11-9/11), and the Division of Soil Protection at the Swiss Federal Institute of Technology in Zurich, Switzerland (5/98-9/98). He has five years of professional experience as an environmental and water resources engineer in the public and private sectors, and is a registered Professional Engineer. In addition to his teaching and research duties, he has performed consulting on environmental issues for public agencies and private companies.

**Dan Buckley** earned his Ph.D. in biology at Syracuse University and has taught at the University of Maine at Farmington for 26 years. He has spent the last 22 years studying various aspects of the ecology of Maine's lakes and ponds. Dan has worked with many lake associations and water utilities helping them increase their knowledge of lake ecology and issues with their lake. UMF was among the first institutions



in the state to do high definition GPS bathymetric mapping of Maine lakes. Dan is a certified plant patroller and VLMP volunteer lake monitor, and he served on the board of the Congress of Lake Associations for 13 years, including six years as president. He is their representative to the state taskforce on invasive aquatic plants. Currently he is monitoring water temperatures in 30 Maine lakes to look at seasonal temperature variation and the dynamics of short term temperature fluctuations, in addition to the impact of climate change on these water bodies.

**Steve Norton** retired from the University of Maine in 2008, having taught there and conducted research for 40 years. Currently, he is Professor Emeritus in the School of Earth and Climate Sciences. Early in his career, he spent about 10 years with the U. S. Geological Survey and the Maine Geological Survey, unraveling the history of crustal rocks in western New England and Maine. About 1970, he switched his focus to the environmental aquatic chemistry of watersheds, groundwater and surface water, and paleolimnology. His research now is concerned with the chemical interaction among water, soil, bedrock, and humans. His "work" has taken him to many places including close to the North and South poles, Europe (with two years in Norway), and to our neighbors – Canada and Mexico. He emerged from teaching retirement in 2012 to teach his graduate course in geochemistry. Currently, his research deals with the biogeochemistry of mercury and phosphorus, and the interaction of aluminum and rare earth elements (REEs) in watersheds and lakes.



**Matt Scott** is an Aquatic Biologist and a Certified Fisheries Scientist by the American Fisheries Society. He is retired after 38 years of service in Maine State Government, including service as Deputy Commissioner of the Department of Inland Fisheries and Wildlife. Matt is past president of the North American Lake Management Society and past president

of the Sportsmen's Alliance of Maine and served eight years on the Board of Environmental Protection. Matt is founder of the DEP lakes program in 1970 and the VLMP in 1971. He is a Master Maine Guide and a backyard beekeeper for 50+ years. He also served on the VLMP Board of Directors for three years.

**Karen Wilson** earned a M. S. and Ph.D. in Limnology/Zoology from the University of Wisconsin - Madison, after receiving a B.S. in Fisheries and Wildlife Biology from the University of California at Davis. She is a faculty member in the Department of Environmental Science at the University of Southern Maine where she teaches courses with an emphasis on aquatic ecology. Karen has researched the long-term impacts of invasive species such as the rusty crayfish and zebra mussels on community and ecosystem properties, and has worked on several aquatic restoration projects. She is interested in ecological subsidies to ecosystems, and has been working on marine-freshwater linkages as typified by alewives, a diadromous fish with a strong presence in Maine. She had been continuing her work on crayfish by compiling a state-wide database that tracks the distribution of native and introduced crayfish species. She is always excited to receive new specimens to add to the database, and is particularly interested in lakes and streams with an unusually high number of crayfish, or reports of fewer crayfish than in years past. Karen lives in Portland with her husband (also an aquatic ecologist) and her three-year old daughter, an ecologist in training.



The VLMP Advisory Board will be meeting within the next few months to explore new ideas and opportunities to strengthen the interface between lake science and lake stewardship.



# HOW DO YOU KEEP TRACK OF YOUR LAKE'S ICE COVER?

The folks at Nickerson Lake Wilderness Preservation, Inc. have come up with a very creative and fun contest to keep track of their ice out-- down to the very minute!

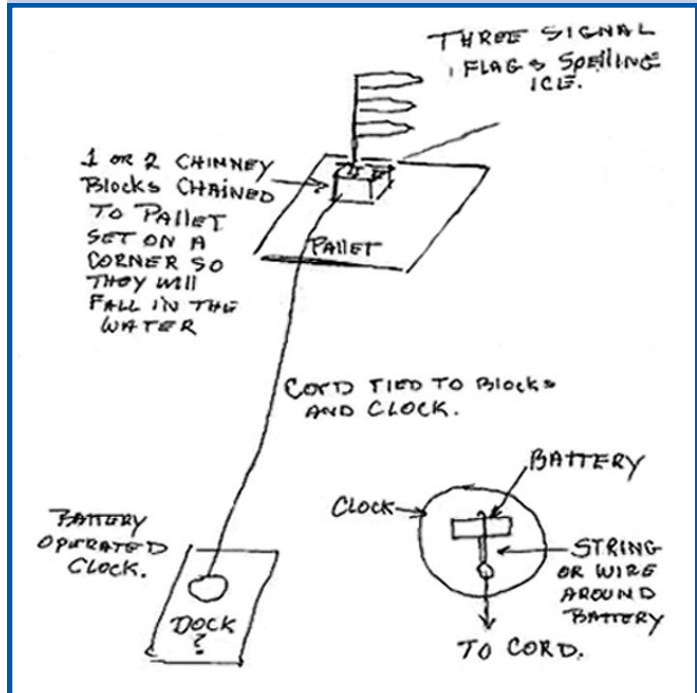
If you are interested in learning more about Nickerson Lake and the NLWP, please visit their website at [www.nickersonlake.com](http://www.nickersonlake.com).

How do *you* measure ice-out? Please let us know!



This picture shows Paul Porter explaining some of the more technical details to Jerry Hammond.

Paul Porter has designed a high-tech apparatus that will determine the time of ice-out with split-second accuracy. He and Al Cowperthwaite have built and installed the device which sets a new standard for ice-out detection equipment.



Please note: This innovative approach to determining ice-out should not necessarily replace a long-standing method that has been used on your lake. Consistency is very important in determining trends.



*From the NLWP website*

President Nancy Putnam has announced the first annual Nickerson Lake Ice-Out Contest!!!

Here is your chance! Were you the one who missed the foul shot that would have won the big game? Or the one who backed your father's new convertible through the closed garage door? Or the one who mistakenly hit the "Reply to All" button? Now is the time to put all that behind you and become a CHAMPION!

Certified as  
Having  
Achieved  
Mastery of  
Prognostication on  
Ice-  
Out at  
Nickerson Lake

## DON'T FORGET TO KEEP TRACK OF YOUR LAKE'S ICE COVER

The winter season is just around the corner, so be sure to keep track of your lake's ice cover. The VLMP acts as a state repository for ice-out records, some stretching as far back as the mid-1800's. Your ice-in (and ice-out) data, when paired with water quality readings, may

improve our understanding of the relationship between the duration of ice cover and water quality.

You can report ice-in and ice-out via e-mail directly to [Christine@mainevlmp.org](mailto:Christine@mainevlmp.org), or you can report by phone at 207-783-7733.

# 2013 INTERNS



**Libby Davis**

This fall I will be a senior at Green Mountain College in Poultney, Vermont, majoring in Biology and minoring in Animal Studies. I hope to eventually obtain my Masters Degree in Wildlife Biology and maintain a career in a field that allows me to research and celebrate the last remaining places and creatures we may still call “wild.” My

previous experience in field biology includes volunteering with organizations like Maine Audubon and the Scarborough Conservation Commission, assisting with invasive plant species removal and studying the population dynamics of native land mammals such as fishers and grizzly bears. The experience I took away from past opportunities has blessed me not only with valuable relationships, skills and knowledge, but also a desire to advance my own understanding of environmental systems in an effort to share with others the intrinsic value of preservation.

Working at the VLMP has been a truly wonderful experience. From the beginning, I strongly resonated with the volunteer-based mission of the organization; however, having the opportunity to see the inner-workings of the VLMP and feel like I was an integral contributor, was an unexpected and vital take-away. It not only revealed to me the sage undertakings of non-profit organizations, but also increased my respect for the devoted individuals who ensure the success of the program and education and safety of their volunteers. Botanizing the native plants, being out on the water engaging with volunteers and getting a chance to reconnect with the beautiful Maine landscape were highlights of the summer. The praise I have for the VLMP and those committed to the effort is limitless. I am honored to have played a supportive role in working towards preserving lakes and ponds all over the state through public awareness and outreach. I will take with me excellent real-world experience, and a renewed sense of what it means to be a part of something larger than oneself as I continue on my intended career path.



**Mark Dennis**

I grew up in a house where protecting Maine’s lakes was a career and a lifelong dedication—my parents have logged something like 75 combined years doing just that. The words “runoff” and “erosion” entered my vocabulary unusually early, and I have always had a healthy respect for the preciousness and fragility of our freshwater resources. And

now after five summers in the business - three years with the Cobbossee Watershed District and one year fighting

Last summer I served as an intern at the VLMP where my work focused on education about, and the prevention of, invasive aquatic species in Maine lakes. This summer, having graduated in May from Bates College with a BA in Environmental Studies and a concentration in geology, I was fortunate to rejoin the VLMP team as a Special Projects Assistant.



**Jamey Epstein**

A highlight of my experiences with the VLMP was being part of the Moosehead Lake Jump-Start team in 2012 and 2013. The energy and expertise that each and every team member brought to the task of preserving and protecting this valuable resource was truly awe-inspiring.

Spending the past two summers at the VLMP has afforded me the opportunity to work with an incredible staff. As a small non-profit organization, the VLMP embodies leveraging of charitable and environmental dollars to achieve far-reaching impacts. The work of a small few helps to activate and support the work of many, resulting in a statewide team of volunteers who undertake to ensure that Maine lakes remain pure for future generations. Participating in training workshops conducted by the VLMP staff, I found that I gained more confidence in public speaking because of my belief in the message being delivered. My heart now lies with fresh water despite my background in rocks! I do not intend to leave Maine, but would rather stay and work for the protection and responsible stewarding of Maine’s fresh water resources. While I am saddened that my time with the VLMP has come to an end, I am excited to join the Auburn Water District for the fall season where fresh water remains a priority!

Thank you to all who support the Maine VLMP. See you out on the water!

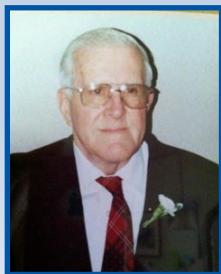
Sebago Lake’s milfoil problem, I can see how easily this work becomes a lifelong task. Our lakes are such a treasure that most days the work we do to protect them hardly feels like work at all; like all caretakers, we work so closely with our patients that it’s natural to remain passionate even when results come slowly. I am grateful to all the volunteers whose contributions sustain our efforts and look forward to working with many of you again in the future. My degree in jazz guitar might never be worth anything, but I’ll be fine if the rest of my life involves staring down a Secchi disk. I just hope it’s more than two meters deep.

*Editor’s Note:* A Secchi reading of 2 meters or less defines a severe algal bloom for Maine lakes.

For information on our spring interns, please see page 22.



# Passings



## Robert E. Crawford

Robert E. Crawford will be missed in Dexter as a man of distinction about water management. Bob had a long-time commitment and concern about the water quality of Lake Wassookeag in Dexter, Maine. He was a valuable contributor to the founding of the Dexter Lakes Association 12 years ago. Bob was very involved in many community affairs. He was

the first President of the Dexter Lakes Association and a welcome advisor until his death at age 81. Bob recorded and monitored the Secchi disk readings for over ten years on Lake Wassookeag; he was helpful in assisting other monitors and encouraging Dexter Lake Association members to attend the water conferences throughout the state. He enjoyed boating around the lake with family and friends, observing ice-out, and all the nature the lake offered.

George was a long-standing member of the VLMP Board of Directors, during which time he was a steadfast champion of volunteer lake monitors and Maine lakes. George was also a certified lake monitor on Center Pond in Sangerville, where he was responsible for the formation of the lake association. George was very active with the Congress of Lake Associations for many years. He was a great friend to VLMP staff, to whom he often offered his

## George A. Cross, Jr.

perceptive analysis of the sometimes complex issues facing the organization. George received the VLMP Lifetime Achievement Award at the 2012 Lake Monitoring Conference, where he spoke passionately about his concern for protecting Maine's beautiful lakes. He will be missed by us all.



## Norm Francis Harte, Jr.

We are saddened by the passing of our friend Norm Harte, who died May 26, 2013, at the age of 75. In 1999, Norm and his wife Esther retired, and split their time between their home on Mattawamkeg Lake in Island Falls (where he served as president of the Island Falls Lakes Association for many years) and Punta Gorda, Florida. Norm was an avid sailor and expert skier.

Norm was water quality monitor on Mattawamkeg for 8 years, and a certified invasive plant patroller for 3 years. He served as regional IPP coordinator for Island Falls for eight years and was instrumental in bringing IPP training and invasive aquatic plant survey activity to the region.

Norm is survived by his wife, Esther, four children and six grandchildren, and was proud to have taught them all the joy of fishing and sailing on his beloved Mattawamkeg Lake.

At the time of his passing at age 92, Ralph was believed to be the eldest statesman of Maine lake monitoring. Everyone who knew Ralph will long remember his remarkable positive spirit, and seemingly endless energy. He was a volunteer water quality monitor on Highland Lake in Windham for 37 years, and participated in many surveys of aquatic flora and fauna on the lake with his monitoring partner, Keith Williams. Ralph was recognized for his longevity and contributions

## Ralph H. Johnston

to Maine lakes at the 2011 VLMP Lake Monitoring Conference.

Ralph was very active in a variety of community causes and organizations, ran for office in the Maine State Legislature, and was a US Navy veteran.



The VLMP cares deeply about our volunteer lake monitors.  
If you wish to share news of a passing, please contact us.

## 2013 INTERNS

Last spring, Bates College students **Felix Xie** (L) and **Kristian Muldoon** (R) joined the VLMP for a six-week internship. Both Kristian and Felix are majoring in Environmental Studies, and were vital to preparations for the 2013 monitoring season.



Many thanks,  
Kristian and Felix!

## Sponsorship Through Advertising in the Water Column

The value of Maine's lakes to the state's economy is substantial; studies have shown that our lakes conservatively generate 3.5 billion dollars in economic activity annually. An increasing number of Maine businesses—companies who not only see the connection between clean lakes and economic prosperity, but who also understand the value of volunteer “match”<sup>1</sup> — now support the work of the VLMP. It is in this spirit of mutually beneficial collaboration that we welcome this issue's corporate sponsors.

If you, or your company, are interested in supporting the work of the VLMP through underwriting/sponsorship of this newsletter, or another aspect of program operation, through the placement of a notice concerning your business, please contact us. Sponsorship notices will be accepted at the discretion of the staff and Board of Directors.

1. Every dollar donated to the VLMP is matched at least 10 times over by volunteer support!

## REMINDER TO ALL VOLUNTEER LAKE MONITORS:

Help ensure the **2013 Maine Lakes Report** will be complete by sending in your data **now!**

### WANTED

**Volunteer Water Quality  
Regional & Data Coordinators**

Help with activities such as scheduling re-certification workshops, communicating with volunteers, and lake data entry. For more information, please contact us at [vlmp@mainevlmp.org](mailto:vlmp@mainevlmp.org) or 207-783-7733.

## Become a Friend of the VLMP!

The VLMP is a uniquely volunteer-powered organization. Most VLMP volunteers are committed to the critically important task of monitoring the health of Maine lakes. But there are many other off-the-water tasks that need to be done in order to keep the entire statewide lake monitoring enterprise moving forward smoothly. As the VLMP grows, these essential behind-the-scenes tasks are also increasingly being shared by our volunteers.

*Friends of the VLMP* are lending their time, talents and creativity to help us build and maintain one of the largest and most active citizen-based lake monitoring programs in the nation. With their much-needed and greatly valued help, the VLMP is better able to meet the demands of Maine's ever-growing statewide network of volunteer lake monitors.

Interested? We are eager to help YOU find and/or expand your special niche in the VLMP. We can use help with a wide range of seasonally variable tasks, from data entry and assembling bulk mailings, to helping with yard work and making repairs to the property. Please contact us today to learn more!

## FREE T-SHIRTS FOR CERTIFIED LAKE MONITORS!

Certified lake monitors are eligible for one of these beautiful t-shirts, free-of-charge! T-shirts will be available in 2014, and may be picked up at any water quality re-certification workshop, IPP workshop, or other VLMP event, including the annual conference. If you are unable to pick up your t-shirt, you may have yours mailed to you for the cost of shipping & handling: \$7.00.



Front

Don't miss out! Please contact the VLMP with your shirt size, either by email or phone, at [vlmp@mainevlmp.org](mailto:vlmp@mainevlmp.org), or 207-783-7733.



Back

Final layout and design of t-shirt may be slightly different.

## SHOW OFF YOUR PRIDE AS A VLMP CERTIFIED LAKE MONITOR!





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## ADDRESS SERVICE REQUESTED

If you would like to go green and receive *the Water Column* in electronic format, please contact the VLMP at [vlmp@mainevlmp.org](mailto:vlmp@mainevlmp.org).

# LOOKING FOR OTHER WAYS TO SUPPORT THE VLMP?

When you clean out your attic, purchase a newer version of an appliance, or inherit something useful you don't have room for, please consider donating to the VLMP.

Here is a list of some items we need. If you would like to donate an item to the VLMP, please contact us before doing so, to make sure it is a good fit for the organization. All donations to the VLMP are tax-deductible.



Picnic Table  
Large Coffee Urn  
Microwave  
Floor Lamps  
Small Computer Desk  
Step-stool  
Vacuum Cleaner  
Plates / Bowls / Mugs  
Brooms  
Office Chairs  
Filing Cabinets  
Bookcase  
Laptops



**THANK YOU FOR YOUR SUPPORT!**