the Water Column

A Publication of the Maine Volunteer Lake Monitoring Program

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Join Us for the 2010 VLMP Lake Monitoring Conference

July 31 in Turner

Inside

What's Inside

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2010 VLMP Lake
July 31 at The Great

Please join the VLMP staff, Directors, volunteer lake monitors from all areas of the state, DEP staff and others, on Saturday, July 31 at the Great Outdoors on Pleasant Pond in Turner, ME. The beautiful facility provides a spacious meeting area, reminiscent of the old lake lodges found throughout Maine, as well as access to the waterfront area. The conference provides an opportunity to share experiences and ideas with volunteer lake monitors with a wide range of experiences, some of whom have been actively monitoring their lakes for more than three decades.

In addition to the scheduled speakers, there will be an opportunity to fine tune your aquatic plant ID skills, both during the morning session in the lodge, and at an optional "plant paddle" on Pleasant Pond following lunch (weather permitting). Drawings for great door prizes will take place throughout the morning, and Maine's most experienced and accomplished lake monitors will be recognized for their exceptional contributions to Maine's lakes.

Certified volunteer lake monitors attend the conference free of charge! The fee for Guests is $36. Pre-registration is required, in order for us to arrange for lunch and refreshments. This is definitely a "feel good" event. We look forward to seeing you!

Cost

Certified Water Quality Monitors and Certified Invasive Plant Patrollers	**Free**
All others	**$36**

Register (by 7/19 please)

Online: www.MaineVolunteerLakeMonitors.org/conference

Or see back cover of this newsletter.

Monitoring Conference
Outdoors in Turner

Presentations

Maine Department of Environmental Protection Lake Protections Efforts
David Littell, Commissioner of Maine DEP

National Lakes Assessment
Roy Bouchard, Biologist with Maine DEP

Growing & Sustaining Maine's Invasive Plant Patrol
Roberta Hill with Crista Straub, VLMP Lake Monitor and UMaine Graduate Student

Branch Lake Milfoil Rangers: An IPP Lake Team Success Story
Don Hayes, VLMP Plant Patroller & Branch Lake Milfoil Rangers—Head Ranger

Activities

Plant Identification Quiz—Test your plant ID skills during registration, breaks and lunch.

Plant Paddle on Pleasant Pond—Help conduct a limited invasive aquatic plant screening survey in this guided excursion. Certified IPP Monitors can fulfill their re-certification requirements. Bring your own kayak or canoe. A limited number will also be available to rent for $25.

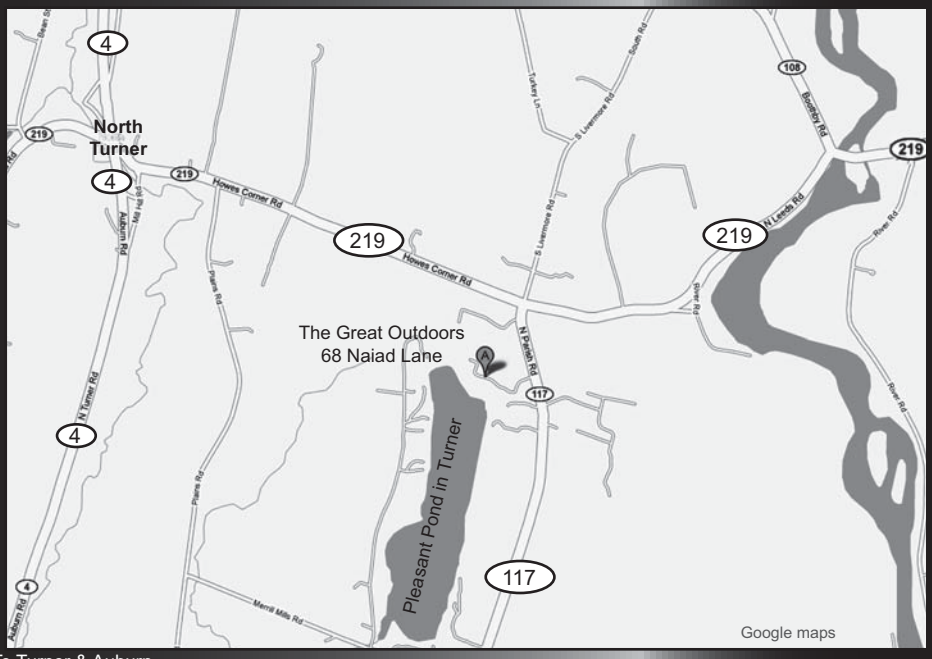
Re-certification for Secchi & D.O. Monitors—Meet on the dock after lunch to update your certification.

Directions to The Great Outdoors

From South (Auburn)
Head North on Route 4 to Turner
Turn Right onto Route 219/Howes Corner Road (Flashing Yellow Light at Intersection)
Go 2 miles and turn Right onto Route 117 at Flashing Light.
In approx .25 miles turn Right onto Naiad Lane, Great Outdoors sign will be at the end of the road, facility is 0.3 miles in.

From East (Augusta)
Head West on Routes 202/100/11
In Winthrop Turn Right onto Routes 133/41 (2.5 miles)
Bear Left and continue on Route 133 (5.8 miles)
In Wayne Turn Left onto Route 219
Travel 7.4 Miles, Turn Left onto Route 117 (Flashing Yellow Light at Intersection)
In approx .25 miles turn Right onto Naiad Lane, Great Outdoors sign will be at the end of the road, facility is 0.3 miles in.

To Livermore & Farmington



To Turner & Auburn

President's Message

AT THE ONSET of the 39th year of volunteer lake monitoring in Maine, I would like to take this opportunity to thank each and every one of you for the great work that you do on behalf of Maine's lakes and ponds. I sincerely hope that the time you spend monitoring your lake this summer is more pleasant than was your 2009 experience, during which much of Maine experienced the wettest summer on record—and 2008 wasn't much better. So, the odds are in your favor this summer!

As you know, the VLMP's annual Lake Monitoring Conference is coming up on July 31. Once again, the conference will be held at The Great Outdoors on Pleasant Pond, in Turner. Many people commented last year about the charming "grassroots" feel to the facility, which is one reason why the conference is being held there again this year. Good friends, good presentations, and good food – all free of charge to our certified volunteer monitors. I hope to see many of you there.

Bill Monagle
VLMP President

As you know, the work of the VLMP relies increasingly on sources of funding from private donations. In addition to the Spring Fundraising Appeal, which was mailed a few weeks ago, we are about to launch our Annual Lake Association Appeal. Please consider asking your lake or watershed association to support the work of the VLMP, and specifically, to help us provide you with the technical guidance and materials essential to monitoring the health of Your Lake. We really appreciate your help with this.

On behalf of the VLMP Board of Directors and Staff, we wish you a warm, safe and productive monitoring season. Whether you are gathering Secchi disk data or conducting an Invasive Plant Patrol Survey, or both, Maine lakes are better protected and healthier as a result of your efforts. Keep up the great work!

VLMP's 2010 Invasive Plant Patrol Workshop Schedule

Register and see schedule updates at www.MaineVolunteerLakeMonitors.org/workshops or call 207-783-7733

IPP Introductory Workshops

The primary goal of these comprehensive workshops is to provide those who wish to join Maine's "early detection" effort with the information and guidance needed to get started All IPP training sessions are open to the public and FREE to anyone interested in learning more about the threat of invasive aquatic plants in Maine

Date	Time	Location, Town
Tues June 29	2:30–8:30PM	St Joseph's College Windham
Tues July 6	2:30–8:30PM	MT. Vernon Community Ctr Mt Vernon
Tues July 15	2:30–8:30PM	DLWA Headquarters Jefferson
Tues July 20	2:30–8:30PM	Liberty Town Office Liberty
Tues Aug 17	2:00–8:00PM	North Dining Hall UMaine Farmington
Thrs Aug 19	2:30–8:30PM	Fish & Game Club Sanford

IPP Advanced Plant ID

Hone your native plant identification skills with live specimens Bring plants from your favorite lake, pond or stream to identify and share with others Previous exposure to plant identification (e g , attending an Introductory IPP workshop) is helpful, but not required

Advanced Plant ID		
Wed August 11	1PM-5PM	Brackett Center in Auburn

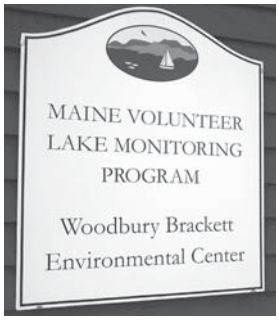
IPP Survey Field Methods

This workshop provides on-lake instruction and practice for those wishing to conduct invasive aquatic plant screening surveys Bring your own shallow draft boat or contact VLMP to make alternative boating arrangements Previous attendance at an Introductory IPP workshop is recommended but not required

Date /Location	
Sun July 11 8AM-12:30PM	Veteran's Memorial Park Raymond
* July 11 workshop also includes ***Mapping Procedures***	
Sun July 18 8AM-1:00PM	Branch Lake Ellsworth
Wed July 21 8:30-1:00PM	Mattawamkeag Lake Island Falls
Sat July 24 8AM-12:30PM	Sabbathday Lake
Sun July 25 1:30-5:30PM	Lake Minnehonk Mt. Vernon
Sat Aug 14 8AM-12:30PM	Damariscotta Lake Jefferson
Sat Aug 21 8:30-1:00PM	Bauneg Beg Lake Sanford

Lakeside Notes

The Legacy of Barbara & Woodbury Brackett



February 24 marked a milestone in the history of the Maine Volunteer Lake Monitoring Program. After operating the program out of the Brackett Environmental Center in Auburn for six years, the VLMP assumed ownership of the buildings and property on that date.

You might well be wondering why we would choose to take on the cost of purchasing and maintaining real estate at a time when the economy is unstable, and our budget is tight. We moved to the Brackett Center several years ago, thanks to the generosity and vision of the Auburn Water District, which had received the property through the Will of Barbara Brackett, with the provision that it would be used for the purpose of protecting the environment. Mrs. Brackett and her late husband, Woodbury, lived on the shoreline of Lake Auburn for many years. She felt strongly about the lake, and she was interested in creating a legacy for her husband.

The Auburn Water District offered the VLMP the use of the buildings and land, with the understanding that at some point they would consider transferring ownership to the VLMP. Late last year, the District Trustees decided that the time had come. We were initially concerned about assuming a mortgage during difficult financial times. However, the terms offered by the District were generous and reasonable. In fact, our monthly mortgage payment is less than we were paying for rent, and it is only slightly more than we were paying to rent two small rooms in Turner several years ago. In the words of one of the members of our volunteer Board of Directors, we would be fools not to take advantage of such an offer. And so, the decision was made.

Even with a generous mortgage, we face financial challenges. While many of the major maintenance projects have been addressed during the past few years, including a new septic system and roof, upgraded electrical circuitry, and more—several known issues remain. The Board of Directors has determined that the most effective way to be prepared for the challenges of owning the Brackett Center is through a fundraising campaign, which we will launch this summer. You will be hearing much more about this exciting campaign in the months to come.

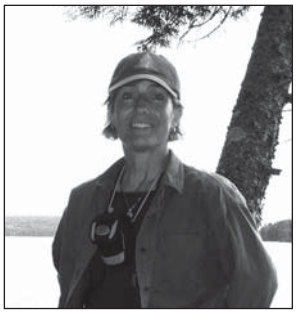
By Scott Williams
VLMP Executive Director

After leasing the Brackett Environmental Center for six years, the VLMP purchased the property in February.

The *2009 Maine Lakes Report* is now available online.
www.MaineVolunteerLakeMonitors.org/publications
To request a hard copy please call us at 207-783-7733

Littorally Speaking

Growing & Sustaining Maine's Invasive Plant Patrol

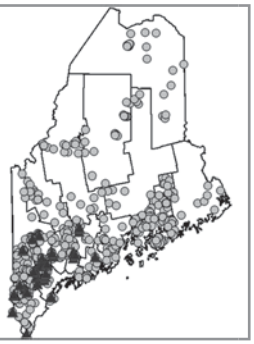


By Roberta Hill
Program Director
VLMP's Center for Invasive Aquatic Plants

Over the eight years it has been in existence, the VLMP Invasive Plant Patrol program has grown by leaps and bounds. This is great news for Maine lakes… but with growth, of course, come new challenges. With 250 to 300 new Invasive Plant Patrollers being added to the program every year, and over 2,000 Invasive Plant Patrollers now trained across the State of Maine, the IPP program has evolved to the point where a more inclusive, interactive, and agile system is needed. Ideally, volunteers will play leadership roles at every level of this system…

When the VLMP achieves its *ultimate* goal as an organization, virtually every lake in the State of Maine will have one or more water quality monitors and an active team of trained Invasive Plant Patrollers routinely monitoring the health of the waterbody. This statewide cadre of dedicated volunteers, trained and certified by the VLMP, will be supported and sustained by a well-organized, integrated, collaborative system involving the VLMP, local, county and State agencies, trained volunteer coordinators, local lake associations, and regional lake conservation groups. The benefits of such a system include:

- Technical assistance and Quality Assurance checks at each level of the system
- Enhanced volunteer involvement and contribution
- Greater program efficiency
- Cost savings



This map shows the location of all invasive aquatic plant screening surveys reported from 2002 – 2009. Though progress has been substantial since the first Invasive Plant Patrol workshop was offered in 2001 (when there was one dot on the map) there is no question that enormous gaps remain statewide

And the bottom line … if we are to continue to grow and sustain Maine's Invasive Plant Patrol, this kind of organization, integration and collaboration is essential. This is why the VLMP has launched the **Invasive Plant Patrol Sustainability Initiative**.

Though the list of tasks and responsibilities for this more formalized, multi-level system has yet to be fully defined (VLMP purposefully wishes to include its volunteers and collaborators in this process) a working outline describing the duties and responsibilities of the primary leadership roles within the system has begun to be articulated. (See Sustainability Initiative…Where Do You Fit In? on page 7)

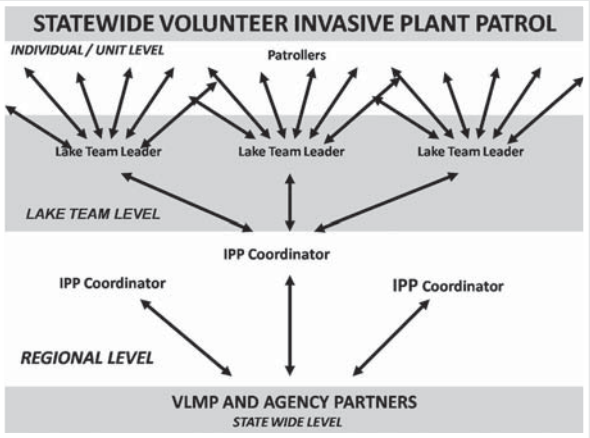
The trained *Invasive Plant Patroller* is at the top of the envisioned structure. Once trained by the VLMP, the Invasive Plant Patroller works on the front line to determine if any of the target aquatic invaders are present in the survey area. Volunteer Invasive Plant Patrollers are now responsible for more than 80% of all invasive aquatic plant screening survey activity being conducted in the state of Maine. IPP volunteers bring energy, expertise, ingenuity, passion and commitment to Maine's early detection effort.

The trained plant patroller is at the top of the envisioned structure.

When it comes to monitoring aquatic invaders, the more eyes on the water, the better. The creation of strong, active *Invasive Plant Patrol Lake Teams* is seen as essential, not only to ensuring the quality of invasive aquatic plant surveys, but also to the long term sustainability of the effort. Each patroller can focus more comprehensively on a smaller survey area; no one's survey area is too onerous. Teams are formed by dividing the shoreline of a waterbody into appropriately scaled sectors (e.g. 500-1,000 foot sections), and recruiting and training volunteers to conduct a survey in each sector.

The *Lake Team Leader* plays a key role in energizing, organizing and providing local technical support to members of the Lake Team. *Lake Associations* also play an

IPP Growth and Sustainability Initiative Where Do You Fit In?



This diagram illustrates (in a very simplified way) the envisioned Invasive Plant Patrol multi-level system. Starting at the bottom of the diagram, the VLMP, working with its State agency partners—primarily the Maine DEP—work collaboratively with the IPP Regional Coordinators to promote and support citizen involvement in the IPP program. The coordinators, in turn, work in direct contact with IPP Lake Team Leaders in their respective regions, notifying them of trainings, providing technical assistance, reminding them to send in their data, etc. Each Lake Team Leader, in turn, is responsible for coordinating and providing local technical assistance for the individual members of his or her team. The arrows indicate the two way flow of information and resources. To see how you and/or your organization fit into this system, and an overview of the roles and responsibilities at each level of the system. please see the online newsletter at www.MaineVolunteerLakeMonitors.org/WCSummer2010

important role in sustaining the team: helping to recruit team members, raising funds for supplies and equipment, providing recognition of the team's work, etc.

Lake teams, in turn, benefit from similar organization and support at the regional level. The VLMP currently has seventeen Volunteer Regional Coordinators across the state of Maine helping to manage the collection, verification, and documentation of water quality data collected from Maine lakes. Through the IPP Sustainability Initiative we are working to develop a more formalized, statewide network of *Regional IPP Volunteer Coordinators* for the Invasive Plant Patrol program, as well.

Regional conservation groups can play a tremendously important role in achieving a sustainable statewide early detection system, whether directly performing the functions of the IPP Regional Coordinator, or supporting a trained volunteer to carry out these essential tasks. The VLMP is already working in active partnership with a number of regional conservation groups to address the threat of aquatic invaders in Maine. Over the years these groups have directly contributed to the success of the IPP program by providing one or more of the functions that are essential to regional coordination—assisting in the organization of trainings; outreach to, and recruitment of, volunteers; collating and proofing local data, etc. The service area and number of waterbodies represented by these regional groups ranges widely, from the relatively small (Tacoma Lakes Association covering five lakes and ponds), to the relatively large (Hancock County Lakes Alliance covering 268 lakes and ponds). It is by building upon these important partnerships and forming new alliances, that we will build a strong, statewide IPP Regional Coordinators system.

At the base of this envisioned system, are the *VLMP Center for Invasive Aquatic Plants* and its *State Agency* partners. Our primary role is to provide educational and technical support needed to grow and sustain the effort at all levels.

Every year the Hancock County Soil & Water Conservation District and their partners The Hancock County Lakes Alliance sponsor a countywide IPP Survey Week, during which they work to engage as many volunteers as possible in conducting IAP surveys at all major boat ramps in the county. (Photo of volunteer, Tricia Dyer, surveying the Tunk Lake boat landing, courtesy of HCSWCD)

The VLMP is the oldest and one of the largest citizen based lake monitoring programs in the nation. Its protocols, training programs and technical resources are widely seen as models for similar programs across the US and Canada. If we have learned one thing over the nearly forty years we have been in existence, it is that our relationships with our volunteers and collaborators are by far our greatest asset as an organization. It is our hope, now that you have a better idea of our vision for the future of the IPP program, that you will help to shape that vision. We welcome your thoughts, comments, ideas, concerns, etc. With your support and feedback, we are confident that we can create a system that will ensure the long term growth and sustainability of this important endeavor.

Life Long La

Certified Water Quality Monitors

37 Years
Joe Emerson, Upper Narrows Pond

36 Years
Robert Susbury, Howard Pond

35 Years
David Hodsdon, Clary Lake

34 Years
Ralph Johnston, Highland Lake
Charles Turner, Panther Pond

33 Years
Charles McClead, Phillips Lake
Richard Offinger, Cathance Lake

32 Years
Thomas Dionis, Balch & Stump Ponds
Kenneth Hold, Bear Pond

30 Years
John Wasileski, Kennebunk Pond
Stan Wood, Swan Lake

29 Years
Kenneth Forde, Stearns Pond
Charles Hodsdon, Great East Lake

28 Years
Bill Mann, Round Pond
William Reid, Wesserunsett Lake

27 Years
John Laskey, Tripp Pond

26 Years
Ken Bailey, Megunticook Lake & Norton Pond
Ruth Eleanor Cyr, Silver Lake
Peter Devine, Garland Pond
Chuck Strandburg, Barker Pond

25 Years
Dick Bell, Manhanock Pond
Pat Bell, Manhanock Pond
Barry Kutzen, Middle Range Pond

20 Years
Donald Ahern, Lower Patten Pond
Robert Eger, Warren Pond
Josephine Ewing, Sewall Pond
Robert Gobeil, Loon Pond
Rosemarie Gobeil, Loon Pond
Bruce Micucci, Little Sebago Lake
Cheryl Soucy, Cobbosseecontee Lake

15 Years
Don Berry, Quantabacook Lake
Warren Bryant, Pennesseewassee Lake
Gert Downs, Webb Lake
Patricia Dyer, Beech Hill Pond
Alan Hamilton, Twitchell Pond
Barbara Paiton, Webb Lake
Wally Penrod, Lovejoy Pond

10 Years
Martin Arnold, Parker Pond
Tom Bannen, Highland Lake
Kevin Brown, Allagash Wilderness Waterways
Nicole Buchanan, West Pond
Bill Buchanan, West Pond
Richard Dubois, Allen Pond
Dennis Ellis, Molasses Pond
Fred Flammia, Cox Pond
Paul Geisler, Crawford Pond
Colin Holme, The 30+ lakes monitored by Lakes Environmental Associaiton
Paul Holweger, Swan Lake
Ellie Hopkins, Locke Pond
Alex Kenoyer, Threecornered Pond
Barbara Kinney, Basin & David Ponds
Larry Mayer, Clark Cove Pond
Dorthy McAllister, Pleasant Pond
David McAllister, Pleasant Pond
Beth Anne Pochopien, Androscoggin Lake
Paul Porter, Nickerson Lake
Waldo Preble, Pemadumcook Chain Lake
Dave Preston, Alford Lake
Dan Reeve, Toddy Pond
Leon Rioux, Sabattus Pond
Stuart Rose, Mousam Lake
Bud Stewart, Skiff Lake
Scott Thies, Moose Pond
C.L Townsend Jr, Middle Range Pond
Zizi Vlaun, Moose Pond
Scott Vlaun, Moose Pond
Nate Whalen, Sebago Lake
John Wilcox, Highland Lake

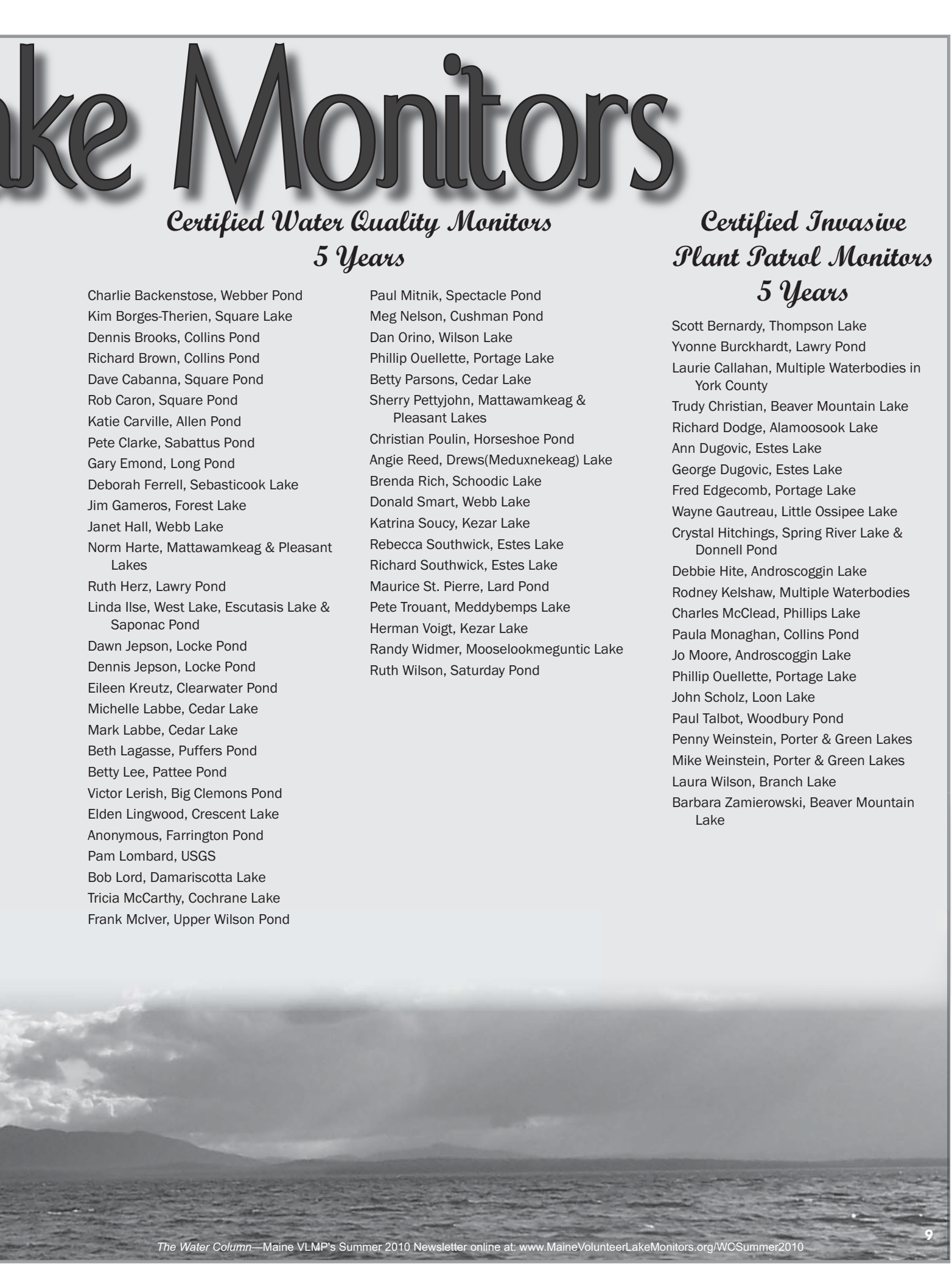
ke Monitors

Certified Water Quality Monitors 5 Years

Charlie Backenstose, Webber Pond
Kim Borges-Therien, Square Lake
Dennis Brooks, Collins Pond
Richard Brown, Collins Pond
Dave Cabanna, Square Pond
Rob Caron, Square Pond
Katie Carville, Allen Pond
Pete Clarke, Sabattus Pond
Gary Emond, Long Pond
Deborah Ferrell, Sebasticook Lake
Jim Gameros, Forest Lake
Janet Hall, Webb Lake
Norm Harte, Mattawamkeag & Pleasant Lakes
Ruth Herz, Lawry Pond
Linda Ilse, West Lake, Escutasis Lake & Saponac Pond
Dawn Jepson, Locke Pond
Dennis Jepson, Locke Pond
Eileen Kreutz, Clearwater Pond
Michelle Labbe, Cedar Lake
Mark Labbe, Cedar Lake
Beth Lagasse, Puffers Pond
Betty Lee, Pattee Pond
Victor Lerish, Big Clemons Pond
Elden Lingwood, Crescent Lake
Anonymous, Farrington Pond
Pam Lombard, USGS
Bob Lord, Damariscotta Lake
Tricia McCarthy, Cochrane Lake
Frank McIver, Upper Wilson Pond
Paul Mitnik, Spectacle Pond
Meg Nelson, Cushman Pond
Dan Orino, Wilson Lake
Phillip Ouellette, Portage Lake
Betty Parsons, Cedar Lake
Sherry Pettyjohn, Mattawamkeag & Pleasant Lakes
Christian Poulin, Horseshoe Pond
Angie Reed, Drews(Meduxnekeag) Lake
Brenda Rich, Schoodic Lake
Donald Smart, Webb Lake
Katrina Soucy, Kezar Lake
Rebecca Southwick, Estes Lake
Richard Southwick, Estes Lake
Maurice St. Pierre, Lard Pond
Pete Trouant, Meddybemps Lake
Herman Voigt, Kezar Lake
Randy Widmer, Mooselookmeguntic Lake
Ruth Wilson, Saturday Pond

Certified Invasive Plant Patrol Monitors 5 Years

Scott Bernardy, Thompson Lake
Yvonne Burckhardt, Lawry Pond
Laurie Callahan, Multiple Waterbodies in York County
Trudy Christian, Beaver Mountain Lake
Richard Dodge, Alamoosook Lake
Ann Dugovic, Estes Lake
George Dugovic, Estes Lake
Fred Edgecomb, Portage Lake
Wayne Gautreau, Little Ossipee Lake
Crystal Hitchings, Spring River Lake & Donnell Pond
Debbie Hite, Androscoggin Lake
Rodney Kelshaw, Multiple Waterbodies
Charles McClead, Phillips Lake
Paula Monaghan, Collins Pond
Jo Moore, Androscoggin Lake
Phillip Ouellette, Portage Lake
John Scholz, Loon Lake
Paul Talbot, Woodbury Pond
Penny Weinstein, Porter & Green Lakes
Mike Weinstein, Porter & Green Lakes
Laura Wilson, Branch Lake
Barbara Zamierowski, Beaver Mountain Lake



Quality Counts!

Comparing Volunteer Lake Data with the "Pro's"

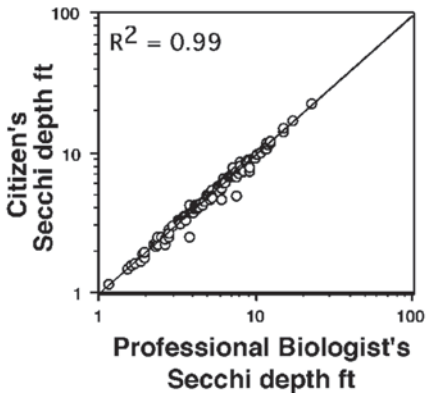
The term "Citizen Scientist" is increasingly used to describe volunteers who have received special training to gather a particular type of data, but who are not scientists by profession. Sound familiar? If you're a certified volunteer lake monitor with the Maine VLMP, you are a "CS".

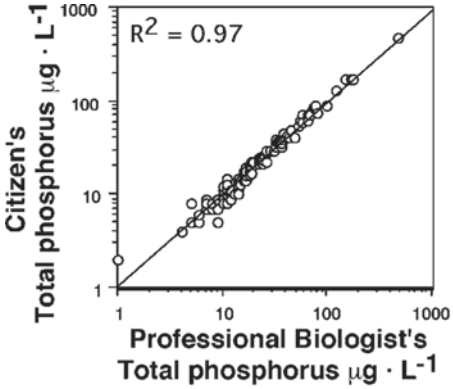
In recent years, it has become clear that the professional scientific community does not, and in all probability, will not have the resources necessary to gather the data to help find and implement solutions leading to the long-term protection and sustainability of our lakes.

This problem was addressed in a broader context in a 2009 report of the National Science Foundation's Advisory Committee for Environmental Research and Education, in which the recommendation was made that the scientific community engage Citizen Scientists (aka: volunteer monitors) in both the collection and interpretation of data.

You should know that it is not unusual for professionals to challenge the validity of scientific data gathered by volunteers. However, a USEPA study in 1990 noted that many studies have consistently shown that volunteer data are reliable, provided that the volunteers have been properly trained, and that the entity overseeing the training and gathering of the data has developed and follows appropriate quality assurance standards. The Maine VLMP clearly defines such standards in a document developed jointly with the Maine DEP. This "Quality Assurance Project Plan", or QAPP, can be viewed on the VLMP and Maine DEP websites. The QAPP is designed for anyone who gathers lake data in Maine, including agency lake scientists, consultants, and volunteer monitors.

In 2002, the Florida Lakewatch program, which is similar to Maine's VLMP,





compared data gathered by volunteer monitors to side-by-side data gathered by professional biologists. The study compared volunteer and professional data for a number of lake quality indicators, including Secchi depth and total phosphorus (Figures above).

The results of this study validated the volunteer data, which correlates very strongly with the professional data. The graphs above illustrate how just how close the results were for the volunteer and professional data. The "Citizen's Secchi Depth" vs. "Professional Biologist's Secchi Depth" plot show a correlation coefficient (R2 on the graph) of 0.99 —a nearly perfect match! The "Citizen's Total Phosphorus" vs. "Professional Biologist's Total Phosphorus" plot shows a coefficient of 0.97, which is also VERY close.

This will come as no surprise to Maine VLMP volunteers, all of whom are required to attend training and recertification workshops, at which their sampling protocol/techniques, Secchi readings and other measurements are compared to those of VLMP and DEP professional staff. The results of those workshops consistently demonstrate that volunteer data are comparable with professionals—and that they are also very reliable

The Florida study concluded that "well-trained volunteers and laboratory staff following basic research protocols with good clean techniques can provide environmental water quality data that are extremely reliable at far less costs." The study also concluded that "Citizen Scientists can help find and implement solutions leading to long-term environmental sustainability."

The level of commitment and passion that we observe over and over in volunteer monitors from Maine, Florida, and throughout the country, is due, in part to the fact that they are working to protect, in Dan Canfield's words: "My Lake". All of Maine's Great Ponds are owned by the citizens and State of Maine, of course. But what we are talking about here is a volunteer who has a special affinity to a particular waterbody, and feels a certain responsibility to protect it as his or her own. Such a person is especially well suited to a job that requires lake, diligence, and didication.

So, Volunteer Lake Monitors, whether you are taking Secchi disk readings, dissolved oxygen and temperature profiles, phosphorus samples, or screening your lake for aquatic invaders: the data that you gather are REAL and they are scientifically VALID, and this information is essential to the long-term sustainability of Maine's lakes and ponds.

Scott Williams adapted this article from a paper entitled: Engaging the "Citizen Scientist" in Environmental Research: The Florida Lakewatch Story, authored by Daniel E, Canfield, Jr, and Roger W. Bachman at the University of Florida

The Branch Lake Milfoil Rangers: an IPP Lake Team success story

The story of the Branch Lake Milfoil Rangers provides a glimpse into the future of the IPP program in Maine. The team itself is an excellent model for forming and sustaining an active, well-trained volunteer team on a lake, pond, or stream. And because Branch Lake is located in Hancock County, one of the State's largest, most active, and well coordinated IPP Regions, their story also provides a model of how the broader, multi-level IPP system works.

Branch Lake is substantial in size, 2,703 acres, eleven miles long and three miles across at the widest point. For the past eight years, the Branch Lake Milfoil Rangers Team has done a complete (level 3) survey of the entire littoral zone of the lake. The shoreline is divided into 23 sectors and surveyed by 33 trained rangers plus paddlers. All team members, except 1, have been trained through VLMP IPP program. The team has an excellent record of maintaining volunteer momentum… only two rangers have resigned over past eight years; approximately half a dozen new rangers have joined.

The Branch Lake Team was honored in 2007 as the Maine Volunteer Lake Monitoring Program's IPP Team of the Year.

The Branch Lake Association (BPA) has played a major role in this success story. It financially supports the team and its training, and helps to recruit and organize the volunteers. Over the eight years it has been in existence, BPA has provided team members with 20-25 homemade six-inch view scopes at a cost of $20-25 each. It also constructed two "glass-bottomed" survey boats which it makes available to the milfoil rangers upon request. Funds to support the team are raised by BPA with an optional donation check-off in the annual lake association dues appeal. Once every other summer, BPA hosts a social event such as a pot luck or BBQ hosted at a ranger's house to report findings and thank the volunteers for their dedication and service.

One of the Branch Lake Team's homemade glass bottom boats: the view canoe

But perhaps the most essential factor helping to ensure the ongoing success of the team has been the leadership provided by the *Lake Team Leader* (or in this case, the "head ranger") Invasive Plant Patroller, Don Hayes. Don's self-defined duties include: calling team members every spring for affirmation of engagement; disseminating the latest version of the VLMP's IAP screening survey documentation forms; sending reminder e-mails during the summer to remind team members to complete their assigned section and to send in their data forms; providing technical assistance to team members, and/or helping to get it from the IPP Regional Coordinator (Hancock County Soil and Water Conservation District) or the VLMP. As the data comes in, Don proofs the survey forms and monitors who has not yet reported, sending reminders to late reporters.

Every team needs a captain! Don Hayes has helped Maine "write the book" on what it takes to be a successful IPP Team Leader.

Once all the forms are proofed, collated and copied, copies are sent to the regional coordinator at Hancock County Soil and Water Conservation District. The regional coordinator proofs the data once more, adds this data to all of the other IPP survey data that has been gathered and submitted in Hancock County, and sends copies of the entire data set to the VLMP. Our staff then enters the data into the VLMP's statewide database, a process that includes additional Quality Assurance/Quality Control checks.

Volunteer Lake Monitors: The ties that bind us

By Scott Williams

We place a strong emphasis on understanding the way that lakes are connected—to each other, to the streams that flow from their watersheds, to rivers and estuaries. All of our water resources are ultimately connected. Our understanding of how lakes work, how they should be monitored, and how to effectively protect them, is through this interconnectedness.

Understanding hydrologic connections is essential to gathering and interpreting lake data. But there is another type of connectedness that plays a role in our efforts to understand and protect lakes. Lake scientists, volunteer monitors, conservationists and others are increasingly contemplating the *PERSONAL* connections that all of us have to lakes, because for many of us, our experiences are ultimately what motivate us to take action on their behalf. When volunteer lake monitors are asked what motivates them to monitor their lake, they often reflect on the time that they have spent on the water, and ways in which such experiences have enriched their lives.

Some of us form strong connections to lakes early in our lives.

The most recent edition (Spring 2010) of LakeLine, a publication of the North American Lake Management Society (NALMS), contains articles written by seasoned lake scientists, lake management specialists, environmental educators and conservationists. The group of articles is collectively referred to as "Reflections," because it focuses on the many ways in which lakes have moved and inspired the authors, their families, friends and colleagues, and have caused them to consider the role that personal experience plays in lake management and protection.

In his article, *A Tale of Two Lakes*, lifelong lake conservationist and educator Lowell Klessig writes about his spiritual connection to two lakes—one of which is a small spring pond near his family home, the other being the largest body of fresh water on the planet—Lake Baikal in Siberia. He explains how, in his view, lakes provide nearly all of the essential components required to sustain life and culture. Klessig also discusses stewardship, a term that comes to mind for many of us when we think of our connection to lakes. But he feels that stewardship may not be sufficient to protect lakes, because while stewards "protect lakes for the benefit of present and future generations", "nature is treated as a commodity to be managed for wise human use". Klessig feels that this relationship needs to change to one of "interdependence and a broad sense of community", if lakes and their many benefits are to survive.

On a similar theme, notable lake scientist and advocate Ken Wagner speaks to the importance of keeping people, lakes and life connected. He emphasizes the value of exploring ways for people to experience lakes throughout their lives. Ken points out that the ways in which we relate to lakes have not only "a profound impact on our lives and wellbeing," but also affect the degree to which society is willing to manage and protect lakes. Consequently, the way that we connect to them is beneficial from truly holistic, ecological perspective.

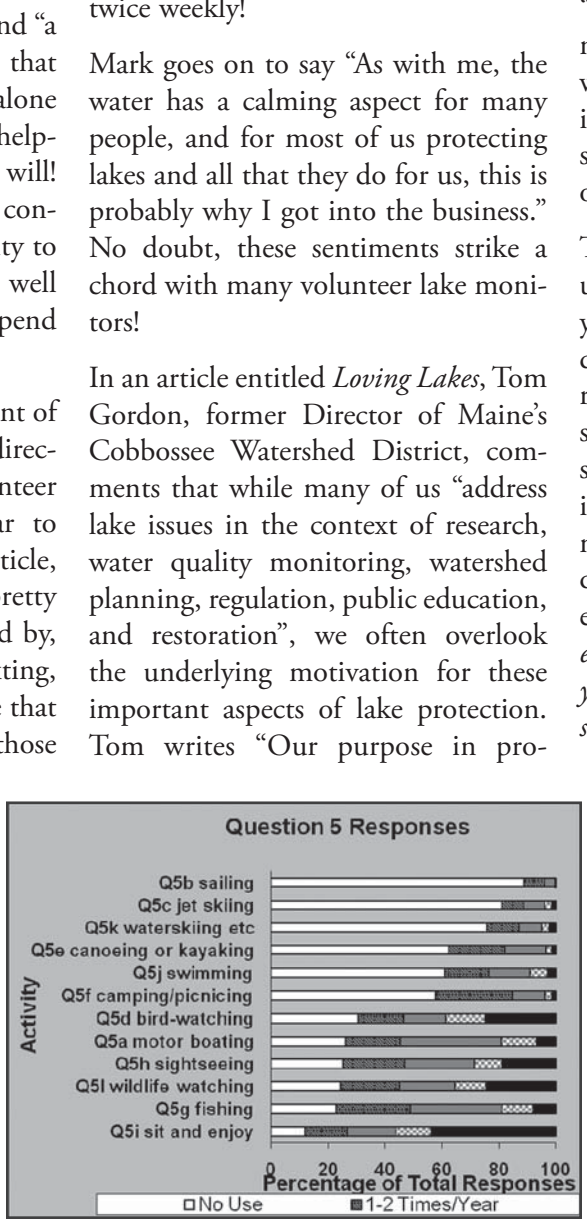
Reading through these powerful essays, I reflected on why I am here, writing this newsletter article. My most powerful recollections of summer are clustered around more than three decades spent with family and friends on a lake in Western Maine. We were fortunate to have a small camp along what was at that time a mostly wooded shoreline. My siblings and I spent a great deal of time in, or on, the water, swimming, fishing, exploring lake ecology (although we didn't know it, as such), paddling our small wooden boat, or sitting with three generations of family around an outside fieldstone fireplace near the water. I vividly recall the quality of the light at the water's edge in early morning, the scent of the water, and the peace and contentment that I felt whenever I was there. I spent many hours sitting on a large hillside boulder that provided a great perspective on the meeting of land and water. I loved getting up early in the morn-

ing to walk through the woods with my grandfather to a hand-dug spring, where we bottled our drinking water. In the evenings, the musical sound of the waves lapping the rocks at the waters' edge was the perfect sleeping potion. It is not by chance that I have been involved professionally with lakes for more than three decades.

Maine's VLMP is all about gathering lake data. Our ultimate goal is to use this information to assess the health of individual lakes, diagnose specific problems, and to provide information to state, regional and local agencies and organizations, to be used for a wide range of purposes, ranging from education to establishing protective standards. But, as Ken Wagner states in his article, although he is a scientist, and "a data guy to [his] core," he knows that ultimately, it won't be the data alone that will protect lakes, but that helping others feel this connectedness will! He urges all of us to find ways to connect family, friends and community to lakes, because "our well-being, as well as that of our lakes is likely to depend on it."

Mark Hoyer is the current President of NALMS, as well as the assistant director of Florida Lakewatch, a volunteer lake monitoring program similar to Maine's VLMP. In his LakeLine article, Mark notes that we are all pretty well connected via, and consumed by, email, cell phones, voicemail, texting, and other devices that help ensure that someone can always find us. But those same devices may also be keeping us, and new generations, from sitting on the lake shoreline and taking it all in. Mark ponders when he was last on a lake for the simple joy of being there.

He notes a Lake User Survey conducted in 2006 of 2,000 lake users in Southwest Florida (Chart right) that asked respondents to rank the amount of time that that they spend at a list of 12 different lake user activities. The number one use was to "sit and enjoy" the lake, with 43 percent of the respondents enjoying this use at least twice weekly!



Who knows how many volunteer lake monitors have been moved to do what they do because of scenic lake visits like this?

Mark goes on to say "As with me, the water has a calming aspect for many people, and for most of us protecting lakes and all that they do for us, this is probably why I got into the business." No doubt, these sentiments strike a chord with many volunteer lake monitors!

In an article entitled *Loving Lakes*, Tom Gordon, former Director of Maine's Cobbossee Watershed District, comments that while many of us "address lake issues in the context of research, water quality monitoring, watershed planning, regulation, public education, and restoration", we often overlook the underlying motivation for these important aspects of lake protection. Tom writes "Our purpose in protecting and restoring lakes is defined by our essential connection to the natural world." And like his colleagues, he acknowledges and emphasizes that "recognizing our deeply personal connection with lakes, our sense of place with lakes, and the significance of story in our work with lakes can build public support for lake projects, and revitalize our commitment."

Through the years, you, Maine's volunteer lake monitors, have discussed your motivations for doing what you do, whether it be taking Secchi disk readings, or conducting invasive plant screening surveys. We have heard you say that you recognize how important it is to gather data for the lake that you monitor, in order to help protect the qualities of the lake experiences that enhance your life. *The stories of those experiences convey important messages to your lake communities, and they underscore the value of your work.*

Please consider sharing your lake experiences and stories with all of us. The VLMP website has an individual page for the lake that you monitor. Each page includes a place for you to tell us how you came to be a volunteer monitor, and why you continue, year after year, to monitor you lake's health. The VLMP is a wide-ranging state-wide enterprise involving hundreds of individuals and groups. Your stories help to weave the fabric that keep all of us connected.

Algal Toxins

By Roy Bouchard
Maine DEP, Lakes
Assessment Biologist

What are blue-green algae?
Blue-green algae are microscopic organisms that are actually bacteria. They are commonly called blue-green algae because dense growths can turn the water any color from blue green to brownish-green. These algae are a natural part of lake ecology, but high nutrient levels in water can cause heavy growths (blooms), especially during warm weather.

What is the Issue?
There have been reports around the globe of blue-green algae producing toxins in fresh waters. These toxins can damage the liver or nervous system, produce gastrointestinal symptoms, or cause skin irritation. Many agencies in North America are paying increased attention to these toxins as more monitoring and research data are becoming available. Though conditions in Maine should make this problem uncommon, we have recently started to evaluate blue-green algal growth and toxin production in Maine water bodies.

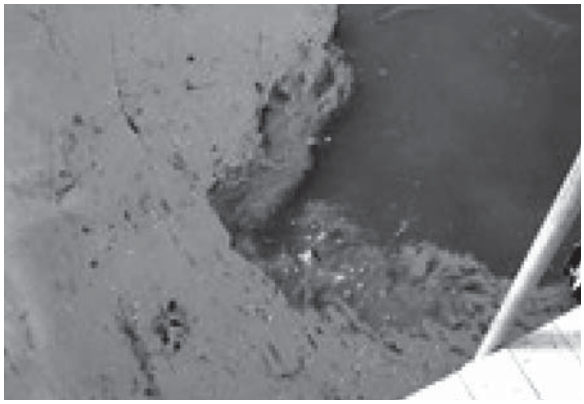
What does a bloom look like?
A bloom is any dense growth of algae that discolors the water. Blooms not only turn the water murky and discolored, including neon green, pea green, blue green, or reddish brown color, but can also cause:

- Bad odors, usually musty in character
- Foam, scum or paint-like appearance
- Green or blue-green streaks on the shoreline

You may also see obvious accumulations of algae material floating on the surface, creating swirls when the water is disturbed.

What about toxic blue-green algae?
Not all blue-green algae or algae blooms are toxic. The reasons algae produce toxins at any given time are not well understood. Standard monitoring techniques cannot predict when a bloom has toxins in it. While heavy growths of blue-green algae often show detectable levels of toxins, only the most intense blooms like those above create a potential for significant toxin exposure for humans and animals. By far the most common and best known toxins are the various forms of Microcystins (MC), which are the focus of most monitoring world wide.

How toxic are these compounds?
Toxic reactions depend on a number of factors, including the degree of exposure (how much water is swallowed, how long the water is in contact, etc.), the concentration of toxins in the water and the sensitivity of the individual. The toxins are not readily absorbed through the skin and it is not clear if health problems can arise from inhaling water droplets with toxins. Though small amounts can cause mild reactions in sensitive individuals, significant human illness has been only rarely reported. However, severe reactions and death of pets or livestock drinking contaminated water have been reported from many locations outside of Maine. Few health-based exposure guidelines exist, but significant toxicity is not likely unless there is a serious bloom.



Algae on a lake experiencing a bloom

What about these toxins in Maine Lakes?
Over the summers of 2008-09, DEP sampled 24 lakes that have histories of algae blooms. Of 91 samples, half were positive for MC but only 3 contained concentrations that were slightly above a health-based guideline for drinking water. No other toxins were found. In 2007, EPA sampled 32 lakes, only a few of which normally produce algae blooms. Only six of these had detectable concentrations of MC. All of these samples were below the World Health Organization recommended health-based guideline for recreational exposure. Samples of surface scums did contain moderate to very high concentrations of MC. While these data only provide a "snap shot" of toxin levels in our lakes, it is clear that conditions vary greatly, even within the same lake and from day to day. High concentrations of toxins are probably confined to lakes with intense algae blooms, but are probably detectable at low levels in many lakes that grow noticeable algae in the summer. Whenever surface accumulations of algae and scums occur, suspect a problem.

What should I do to avoid problems?
While most adults will avoid green discolored water, a hot day can lure children and pets into the water.

1. Do not swim, water ski, or boat in areas where algae are visible (e.g., pea soup, floating mats, scum layers, etc), or where water is discolored.
2. Do not let pets or livestock swim or drink where the water is discolored or where you see foam, scum, or mats of algae on the water.
3. If you swim or wade in water that has dense algae present - rinse off with fresh water (and soap if available) as soon as practical. This is also an effective method of reducing skin exposure for your pets.
4. Do not drink lake water during a bloom. Well maintained domestic water treatment systems may make lake water safe to drink in many instances, but they are not guaranteed to remove algal toxins.

Whom do I call with questions?
If you want to report a bloom, contact the DEP Lakes Staff at 207-287-3901. For information on health effects, contact the Environmental and Occupational Health Program (866-292-3474 in state).

Meet the 2010 Interns

Hello, my name is **Juliette Gorson** and I was born and raised in Philadelphia. I have just completed my junior year at Colby College, where I double major in biology and animal ethics. After graduating college I plan on traveling to the west coast to attend a marine biology graduate program. This past January I volunteered my time in South Africa at the Vervet Monkey Sanctuary where I was primarily in charge of medicating any sick or injured monkeys (they have about 750 monkeys so it was a big job) and feeding abandoned babies. I absolutely love animals and I am especially interested in marine animals. This summer I will be interning with the DEP through the VLMP and specifically the lake assessment program. I think this will be a great opportunity to be introduced to aquatic biology and I am super excited to get my feet wet (literally).

Hi, my name is **Jeff Mercer.** I am a 2010 summer intern with the Maine Volunteer Lake Monitoring Program (VLMP). I just completed my third year at the University of Maine where I am majoring in Civil and Environmental engineering with a focus on water resources and treatment. I grew up in Maine and spent many summer days hiking, boating, and camping. As a result, I developed an intimate relationship with one of Maine's most important natural resources: its lakes. I feel I have an obligation to assist Maine VLMP and its volunteers so that future generations are not deprived of what I experienced as a child on Maine's lakes. For this reason, I am proud to be a member of this fantastic organization.

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